

# CA JOURNAL

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## CAA-CAB Announce Plan For Increasing Air Safety

The Civil Aeronautics Board and the Civil Aeronautics Administration, have jointly announced three steps in a continuing program for increasing safety of both air travelers and people on the ground near airports.

The program involves more stringent regulations governing training and proficiency checks for pilots of all carriers operating under Part 42 of the Civil Air Regulations, which include the large irregular carriers, certificated freight carriers, off-route operations of certain of the certificated carriers, and others; CAA action to insure thorough pre-flight briefing of such pilots; and a special CAA inspection program for such air carriers.

While the new civil air regulations have been put into effect, the Board indicated that further consideration would be given to them before they were made permanent. In issuing the regulations the Board declared that many Part 42 air carriers have a sound flight organization, headed by a responsible chief pilot and including one or more competent check pilots. However, the Board pointed out that this was not universally true and that centralized responsibility for flight personnel is being specifically required in the Board's regulations.

**Pilot Proficiency.**—The regulations provide for the designation by each carrier of a chief pilot responsible for assuring the proficiency of all pilots utilized, and of an adequate number of check pilots acceptable to the CAA. They prohibit use of pilots unless within the preceding six months these pilots, in addition to present requirements, have passed a written examination on the company's operations manual and on all types of instrument approach and navigational facilities and procedures to be used.

The CAA is establishing a more formulated and detailed procedure to assure compliance by Part 42 carriers with existing regulations requiring pre-flight briefing. In its manual covering operations of Part 42 carriers, it will stipulate that before a flight, the pilot in command must certify, on a permanent record to be maintained by the carrier, that he has familiarized himself with the en route procedures, holding patterns, approach and let-down procedures, and the facilities of the airport of destination and the alternates.

The CAA also is instituting immediately for all Part 42 carriers an intensified en route inspection program in addition to the regular inspections. This

will continue for at least 30 days, and among other purposes, will enable CAA to bring to the attention of Part 42 carriers any particular phase of their training programs which may need straightening.

The Board and Administrator pointed out that the three steps are an outgrowth of a continuous review of air safety matters, and said that other measures would be applied whenever a study indicated a possibility for constructive action.

## CAR's Covering Aircraft Repair Revised by CAB

The Civil Aeronautics Board recently announced the revision of Parts 18, 24, 52 and 53 of the Civil Air Regulations, the Parts concerned mainly with the maintenance and the repairing of aircraft.

The following explanatory material was issued by the Board concurrent with the adoption of the revisions.

**Part 18—Maintenance, Repair, and Alteration of Airframes, Powerplants, Propellers, and Appliances.**—"Currently effective Part 18 establishes rules for the maintenance, repair, and alteration of certificated aircraft, aircraft engines, propellers,

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## Cross-Border Plan Lauded by Users

A new means of simplifying air travel to the United States is being tried out with great success in Toronto, Canada. U. S.-bound air travelers, whose baggage now receives "preclearance" there, are delighted with the time-saving aspects of the experiment, it is reported.

The Facilitation Subcommittee of the Air Coordinating Committee, of which Harry G. Tarrington, Program Officer of the Civil Aeronautics Administration, is Chairman, will study the results to determine the advantages of extending this system to other foreign points where the traffic warrants.

The idea of preflight clearance, which was originally advocated by the Facilitation Subcommittee of the ACC, has been put into effect under the legal authority vested in the U. S. Immigration and Naturalization Service and the U. S. Bureau of Customs. The mechanics of the arrangement, by which U. S. Customs and Immigration officers are stationed permanently at Toronto, were worked out under the guidance of Burke H. Flinn and John H. Mulcahey, Air Coordinators, respectively, of the Bureau of Customs and the Immigration and Naturalization Service.

American Airlines cooperated in the plan and assisted travelers in Toronto, who were headed for U. S.

cities, to submit their baggage for advance examination. After such examination and the proper declaration and the deposit of duties, if any were required, the baggage was put under bond and handled thereafter by the airline. At his destination the passenger could obtain his baggage and leave the terminal as soon as the aircraft was released, thus avoiding the delays that previously had existed at the end of his journey.

The airline asked 600 passengers for their opinion of the plan in a postcard poll, and received such enthusiastic replies as these: "A marvelous idea. A very kind and thoughtful gesture on the part of the U. S. Government." "I believe this to be the most satisfactory arrangement possible." "It's going to seem good to get off the plane in New York and not have the Customs routine to go through." "A very convenient and efficient method of covering a necessary regulation." "Vast improvement. Saves time and is less troublesome. Same system should be put in at other ports." "I was able to leave the plane at New York at 10:00 a.m., catch a taxi, register at the hotel and arrive at 250 Park Avenue at 10:25 a.m. Excellent time."

# Status of Present-Day Civil Aviation

## Summarized by CAA's Administrator

The highlights of aviation, exclusive of military and air carrier operations, was the topic of an address, entitled "General Aviation Today," given by Charles F. Horne, Administrator of Civil Aeronautics, before the North Central Section of Ninety Nines, at Fort Wayne, Indiana on May 3.

In his opening remarks, Mr. Horne briefly touched on CAA's job of promoting and developing civil aviation, describing it as a "king sized job." He then added: "In trying to accomplish our objectives we get criticism from individuals and from organized groups—all of which we take into account in order that we may do a better job for civil aviation. We like constructive criticism—we need it."

Mr. Horne then turned to the work of the Ninety Nines, saying: "I personally believe, and my opinion is shared by many others in the CAA, that if there were more organizations like the Ninety Nines the task of fostering and encouraging civil aviation would be a far easier one." The Administrator extended his commendation to the Ninety Nines for their air marking program, telling them that they had done a splendid job—one for which the entire industry was indebted to them.

Pointing out the impossibility of covering the entire field of general aviation in one sitting, the Administrator said that he would endeavor to touch on some of its highlights. "The overall picture," he said, "is both good and bad, depending on what phase of aviation one is discussing." With this introductory statement, Mr. Horne began a rapid survey of the conditions of general aviation in the United States today. Excerpts from his address follow.

**Personal Flying.**—"Personal flying is in a low spot and currently has fewer people really active in it than almost any of the flying activities. There are many good reasons for the slackening off of this type of flying. In the first place, it is just too expensive. Airplanes cost far too much money to have the popular acceptance of automobiles. Learning to fly is expensive too for the ordinary salary earner. The expense of owning an aircraft for purely pleasure flying is compounded by the high cost of maintenance, hangar or tie-down charges as against those of other types of transportation. In addition to the expense as a deterrent to this type of flying, there is the old question of full utility or perhaps I should say, the lack of it. \* \* \*

"These are some of the ailments of private flying. I wish I could prescribe a sure cure. Some people say it is a dark picture, but I feel it is by no means hopeless. The development of a relatively inexpensive and easy to fly airplane would certainly help. So would more small airports scattered at locations to increase the utility of our aircraft. The CAA has tried repeatedly to help and may be in a position to do more good in this respect at some future time. \* \* \*

**Executive and Agricultural Flying.**—"All types of flying within the framework of general aviation are not in the same sad shape as pleasure flying. On the contrary, the field of executive or corporation flying is enjoying an unprecedented boom. The increase in this category since the war has been phenomenal until today it is considered a large and important segment of our aviation industry. \* \* \*

"The same may be said of agricultural aviation which is enjoying tremendous growth throughout the country. A recent count revealed that there are in excess of 6,000 aircraft now engaged in crop dusting and spraying activities. These spraying and dusting activities are playing a vital role in the national defense. This is backed up by reports of increased

cotton yield per acre through application of insect-control as well as substantial increases in food crops. \* \* \*

"Not the least important of the developments in the field of agricultural aviation is the new aircraft designed especially for that purpose. The development of this aircraft is an example of the cooperation necessary for the continued advancement of aviation. Acting on suggestions and advice from many sources, the CAA contracted with the Personal Aircraft Research Center of Texas A & M College to design and build one experimental plane especially adapted for agricultural use. Many aircraft companies and organizations contributed parts and equipment to make the finished product.

"The agricultural plane has been flown successfully for several hundred hours and by hundreds of pilots. It is now on loan to Texas A & M College for two years for experimental work on dispensing apparatus. The Department of Agriculture representatives are working with our people. \* \* \*

**Other Aircraft Uses.**—"The airplane is being put to many uses other than for agricultural purposes. Air ambulance service has saved many lives. Ranches are employing aircraft to patrol ranges. Use of small aircraft for pipe and power line patrol is on the increase. Aircraft are even used to hunt down coyotes on the western ranges.

"The situation with the fixed base operators around the country is not as bright as that of agricultural and industrial aviation. Fixed base operations always have been closely tied in with instructional and pleasure flying. With a temporary slackening of these two activities, the fixed base operators must find new sources of revenue.

"Many have turned to some form of agricultural flying to boost their incomes. Others have promoted interest in aviation by sponsoring flying clubs and air tours. These are excellent examples of good business and promotion. The air tours have proved exceptionally successful.

"Another means of stimulating interest is through the CAA sponsored meetings in which pilots get together and discuss accidents and their causes. We have reports from some of these meetings and have learned that non-aviation people have attended, become interested and are now taking flight instruction. \* \* \*

**Safety Factors.**—"Many people are suspicious of aviation, they believe it is big business or that it is dangerous. People do get killed in aviation, of course, the same as in any other form of transportation. This is unfortunate but inevitable. What we must point out to the general public is that aviation does not have a bad accident record.

"As a matter of fact the latest statistics available for all types of aviation show that one could fly in excess of two million miles for every fatal accident and over a million and a quarter miles for every fatality. \* \* \*

"One of the reasons for some of the public distrust of aviation is the spectacular nature of its accidents. Aircraft accidents just seem to get more public attention than those of any form of transportation. This causes many people to lose faith in the vehicle without determining the causes of the accidents. Contrary to most opinions the vehicle itself is not responsible for most of the accidents.

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Charles F. Horne, Administrator

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## CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board.

### Administration

Change to Nautical Miles to Affect Private Pilots—(CAA 52-14) (April 4.).

Air Passengers Praise Plan to Speed Border Crossings—(CAA 52-15) (April 9).

Air Tours Promote Midwest Soil Conservation—(CAA 52-16) (April 15).

Eighth Foreign Repair Station Given CAA Certificate—(CAA 52-17) (April 15).

Japanese Pilots Given CAA Training for Peacetime Flying—(CAA 52-18) (April 19).

Address by Charles F. Horne, Administrator of Civil Aeronautics, North Central Section of Ninety Nines, Fort Wayne, Indiana, May 3, 1952. "General Aviation Today."

Address by Charles F. Horne, Administrator of Civil Aeronautics, National Conference on Airborne Electronics, Dayton, Ohio, May 12, 1952. "Airways—Present and Future."

### Board

CAB Denies Renewal of Mid-West Airlines Certificate—(CAB 52-28) (April 10).

CAB Orders Freight Forwarders to Cease Unauthorized Operation—(CAB 52-29) (April 17).

Board Announces Date of Public Hearing Investigating U. S. Airlines, Inc., Crash at Jamaica, L. I., N. Y.—(CAB 52-30) (April 21).

Board Announces Date of Public Hearing to Determine Cause of Pan American Crash Near San Juan, Puerto Rico—(CAB 52-31) (April 21).

"Statistics for 1950 show pilot error was responsible for more than 70 percent of all the aircraft accidents in instructional flying, pleasure and non-commercial flying, in commercial flying and in all other types except scheduled air carrier and Alaskan irregular operations. So in most cases it is not the aircraft

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# Aviation Safety's Engineers and Agents Help U. S. Producers Make Safe Planes

American manufactured aircraft dominate the air lines of the world. The 54,000 active civil planes in the United States represent the largest civil aircraft fleet in the world.

All of which means that American planes are good. They have stood the test of billions of passenger miles flown in all kinds of weather, in every climate. Over land and sea. In this achievement, some credit must go to the Aircraft Engineering Division of the Office of Aviation Safety, Civil Aeronautics Administration.

CAA engineers would be the first to say that American aircraft designers and engineers, the skilled workers in our manufacturing plants—American know-how and efficiency—should get the bulk of the credit.

But the CAA Aircraft Factory and Aircraft Flight Test Agents have a place in the picture. These men are there at important periods in the birth of every new plane type. The Aircraft Factory Agent is there when the new plane takes form and shape. The Aircraft Flight Test Agent is there when the new plane is flown.

The rules for airworthiness are promulgated by the Civil Aeronautics Board in the form of Civil Air Regulations.

The Civil Aeronautics Administration administers these rules and on the basis of operating experience frequently recommends improvements for adoption by the Board.

To place a new-type plane on the market, a manufacturer must first obtain a type certificate from the CAA. This certificate is evidence that this plane meets safety standards set by the Civil Air Regulations.

**CAA Project Engineers.**—As soon as a manufacturer notifies the CAA Regional Office, (or in the case of an engine or propeller, the Washington Office), that he plans to produce a new model, or substantially modify an existing type of airplane, the CAA assigns one of its project engineers to follow the progress of the new plane from the drawing board until the final test flights are completed and it is ready to go into production.

The CAA project engineer may be in for a long assignment as the prototype, or first model of the new plane is developed from an idea into a new vehicle of air commerce. It is a long step, or rather series of steps, from the aircraft designer's drawing board to the factory production line. Thousands of drawings may be necessary. When the job reaches the stage where actual manufacturing begins, a new and even more difficult phase is entered.

**Manufacturing Inspection Agent.**—The CAA project engineer needs more help at this stage. A CAA manufacturing inspection agent now enters the picture and makes sure that all parts are manufactured in accordance with the drawings. At each stage in the development, parts and components must be checked carefully to see that they meet required specifications and standards of workmanship. If a new powerplant is being developed, once it has been assembled it must be test-run a minimum of 150 hours. Highly interested experts keep anxious eyes on the powerplant during this grind, watching for evidences of visible strain or dangerous vibration. At the end of this test, the big machine is dismantled part by part and carefully inspected for sign of excessive wear or unexpected stresses.

Propellers must go through a type certification test that is just as grueling.

Once assembled, the airframe of the new plane, large or small, must be tested if unconventional types of construction are used in it. Formerly, sand or shot bags were used to test the wings. Now an elaborate system of jacks and levers and tension patches is used to impose the load that every section must take. This modern method simulates the action of air loads on the structures.

In these tests, the wings and other parts of the airframe are subjected to strains beyond any expected in normal operations.

**Type Certification Board.**—Once the new plane has been assembled, a type certification board meets to pass on it. It is the duty of the type certification board to make sure that all aspects of airworthiness, crash worthiness and maintenance are properly coordinated within the framework of the Civil Air Regulations. Engineering data has been carefully checked in designing the plane up to this point, but engineering data, no matter how convincing, does not tell the whole story. The airplane must be evaluated by engineering flight test people in actual flight. Also they want to know what will happen when the plane is put through an accelerated test program.

A series of flights is undertaken to determine the plane's performance and flying characteristics. For example, if it is a multi-engine transport plane, the prototype must demonstrate that if an engine fails at the point of take-off the plane can continue to take off and climb at the rate of not less than 50 feet a minute, long enough to get the landing gear up and thereafter to be able to continue flight. In addition, on long flights such as over the ocean, a four-engine plane must be able to continue on to a safe landing place, assuming that two engines become inoperative.

**Production Certificate.**—After a type certificate has been issued for the new plane, there is still another check, to make sure that the plane is produced in a satisfactory manner. To produce the new plane, the manufacturer must first have a production certificate. This certifies that the manufacturer's facilities and quality control procedures are adequate to produce identical airworthy craft and that he maintains an adequate staff of engineering, flight test, production and inspection personnel to do his work in a satisfactory manner.

In keeping with CAA policy to pass on to industry as much of the job of policing and regulating civil aviation as possible, the Administrator of Civil Aeronautics in 1951 adopted a procedure whereby qualified manufacturers of small aircraft can assume full responsibility for testing and certifying their product. Under this plan, manufacturers of planes weighing not more than 5,000 pounds and carrying not more than five persons can certify to the CAA that the planes have been designed and manufactured in accordance with safety standards of the Civil Air Regulations. Certification is handled by the manufacturer through a responsible person in his organization known as a designated aircraft certification representative, who is approved by the CAA and who follows procedures established by CAA.

Upon adoption of this new policy, Piper Aircraft Corporation and the Cessna Aircraft Co. applied for authority to test and certify light planes under the new procedure and approval was given by Charles F. Horne, Administrator of Civil Aeronautics.

## Foreign Repair Station Given CAA Approval

The maintenance and repair shop of "Sabena," Belgian Airlines located at Brussels, Belgium, has been granted an Approved Repair Station Certificate by the CAA. "Sabena" is the eighth foreign repair station to be given CAA certification.

## Board Order Denies Renewal Certificate Of Mid-West Airlines

Declaring that the cost to the Government would far outweigh the limited benefits derived from the services, the Civil Aeronautics Board last month refused to renew, after June 30, 1952, the certificate authority of Mid-West Airlines. Mid-West, a local service airline, with headquarters in Omaha, Nebr., presently operates routes to Minneapolis, Minn., Huron, S. D., North Platte, Nebr., Des Moines, Iowa, and other points in the general area.

The Board recognized, however, that several communities within the area served by Mid-West could very possibly be served advantageously by existing carriers, and reopened the proceeding to consider the addition of Fargo, N. Dak., Norfolk, Nebr., Yankton, Mitchell and Brookings, S. Dak., and Austin, New Ulm, Worthington and Mankato, Minn. to the system of Mid-Continent Airlines, and of Scottsbluff, Nebr., to the system United Airlines.

The steps taken to include all or several of these communities on the systems of other existing carriers will insure that as to those points found to require direct air service, such service can be provided with little or no interruption in schedules. Mid-West Airlines will not be required to terminate operations under its certificate until July 1, 1952, by which time it is hoped that the necessary procedural steps can be accomplished to effect the transfer to existing carriers of such cities as are found by the Board to justify continued air service.

**Estimated Subsidy.**—The Board estimated that the further operation by Mid-West even with DC-3 equipment in place of single-engine aircraft would require the Federal Treasury to contribute more than \$4.00 for each \$1.00 of revenue provided by the users of the service. The average federal contribution to DC-3 local service operators in 1951 was approximately \$1.03 to each \$1.00 contributed by the users of the service.

Mid-West inaugurated service over its route in October 1949, after the Board authorized the use of single-engine equipment. The cost to the Government of this operation in 1950 was \$527,976, or about \$11.00 for every \$1.00 of commercial revenue.

Control of Mid-West was recently acquired, after CAB approval, by Purdue Research Foundation which has been operating the company, and which planned to reorganize and to convert to DC-3 operations.

The Board said that while it had been demonstrated by some local service airlines that a change from small equipment to DC-3 aircraft had resulted in an increase in the volume of traffic on the routes, the evidence did not indicate that the equipment changeover would increase Mid-West's commercial revenues to the point where the cost to the Government would not be excessive in relation to the public benefits derived from the service. Over 50 percent of the total route mileage of Mid-West's proposed routes involved point-to-point duplication of existing services, due to the absence of airports adequate for DC-3 equipment at many of the points proposed for service. The Board said that the amount of new DC-3 service which would be provided by the proposed route would be relatively small as compared to the cost of the service to the Government, and that many of the points already receive service by DC-3 or better equipment.

The Board also stated that the area served by Mid-West suffers little from isolation, and that surface transportation is readily available for making connections with existing air services. The airline's pro-

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# Official Actions . . . . . Civil Aeronautics Board

## Regulations

### Amdt. 61-7 Effective March 12, 1952

Amends Part 61 so as to allow the Administrator of Civil Aeronautics immediately to implement a program of establishing preferential runways in the interest of safety.

### Amdt. 21-10 Effective April 14, 1952

Amends Part 21 by deleting the requirement that pilot-in-command time be obtained within 8 years of the time of application for an airline transport rating, permitting time a copilot performed under specified conditions to be used to fulfill the experience requirement.

### Amdt. 42-11 Effective April 17, 1952

Amends Part 42 with respect to pilot training and check program so as to require all operators of large aircraft to maintain a sound flight operations organization and training program, headed by a responsible pilot, and one or more competent check pilots.

### SR-380 Effective March 31, 1952

Supersedes SR-362 and extends to April 1, 1952, the authority of Reeve Alutian Airways, Inc., to deviate from the flight time limitations of paragraph (a) of section 41.54 of the Civil Air Regulations over its route between Anchorage and Adak, Alaska.

### SR-381 Effective March 31, 1952

Supersedes SR 372 and extends to Sept. 30, 1952, the regulation established by it with respect to flight time limitations for pilots not regularly assigned to one type of crew.

### PR-14 Effective April 28, 1952

Revised Part 302 of the rules of practice restates and adds to the procedural rules governing the conduct of economic proceedings before the Board.

### Part 18 Effective June 15, 1952

Revised Part—Maintenance, Repair, and Alteration of Airframes, Powerplants, Propellers, and Appliances—restates and clarifies the standards and sets forth the classes or persons who are authorized to perform and approve maintenance, repair, or alteration of any certificated aircraft or component thereof. (See story on page 41.)

### Part 24 Effective June 15, 1952

Revised Part—Mechanic and Repairman Certificates—establishes certain new requirements for the issuance of such certificates and ratings, delineates the privileges and establishes basic operating rules and a new classification of airman to be known as a repairman. (See story on page 41.)

### Part 52 Effective June 15, 1952

Revised Part—Repair Station Certificates—improves the standards of repair stations, establishes additional ratings, and places a greater degree of responsibility for the operation and performance of repair stations on management. (See story on page 41.)

### Part 53 Effective June 15, 1952

Revised Part—Mechanic School Certificates—revises the regulations and establishes new requirements for the issuance of certificates and ratings and basic operating rules for holders. (See story on page 41.)

## Safety Orders

S-482 grants motion of the Council for C-46 Engineering to physically strike from the record the exceptions of the Administrator of Civil Aeronautics to the examiner's report in the matter of a proceeding to make certain determinations with respect to maximum take-off weights for C-46 aircraft; grants the Administrator leave to file within one week from the date of this order, an amended statement of his exceptions conforming to the rules and regulations of the Board. (Mar. 18.)

S-483 affirms the examiner's order in the matter of a complaint of the Administrator of Civil Aeronautics against Donald C. Eager. (Mar. 20.)

S-484 denies appeal of Harry Allen Snow and affirms the examiner's order in the matter of a complaint of Administrator of Civil Aeronautics. (Mar. 21.)

S-485 modifies examiner's initial decision in the matter of a complaint of the Administrator of Civil Aeronautics against Henry Herman Koch, and orders that respondent's airman certificate be revoked and that no type of airman certificate be issued to him prior to Sept. 6, 1952. (Mar. 25.)

S-486 opinion and order in the matter of a complaint of the Administrator of Civil Aeronautics against Alfred F. Tucker vacate Board order No. S-443 and dismiss the proceeding. (Mar. 26.)

S-487 modifies examiner's initial decision in the matter of a complaint of the Administrator of Civil Aeronautics and orders that the airman certificate of Thomas C. Murphy be suspended 4 months from April 7, 1952, or 4 months from a subsequent date of surrender of his airman certificate, and until such time as he shall have satisfactorily passed an examination on the Civil Air Regulations. (Mar. 28.)

## Airline Orders

E-6039 dismisses complaints of Delta Air Lines and National Airlines requesting suspension and investigation of Eastern Air Lines' proposal to extend summer excursions fares beyond September 30, 1951. (Jan. 16.)

E-6040 opinion and order in the Reopened Additional California Nevada Service case amend certificates of Bonanza Air Lines for route No. 105, Western Air Lines for route No. 13, and Frontier Airlines for route No. 93; otherwise denies applications for additional local air service in California and Arizona. (Jan. 17.)

E-6041 institutes an investigation to determine whether the integration of routes of Southwest Airways Company and Bonanza Air Lines into a single unified system by means of merger, consolidation, acquisition of control, or route transfer would be in the public interest; orders proceeding assigned for hearing before an examiner of the Board at a time and place to be designated. (Jan. 17.)

E-6042 denies petitions of Delta Air Lines, and Chicago and Southern Airlines with respect to authorized interchange services and for approval of a proposed interchange arrangement denied by the Board in order No. E-4823 in the Through Service Proceeding (Docket 3426) and the Kansas City-Memphis-Florida case (Docket 1051.) (Jan. 17.)

E-6043 grants American Airlines, Eastern Air Lines, Piedmont Aviation, Trans World Airlines, United Air Lines, and numerous cities, chambers of commerce, and state organizations in West Virginia, Pennsylvania, Maryland, and New Jersey leave to intervene in the matter of the application of All American Airways for alteration or amendment of its certificate for route No. 97. (Jan. 18.)

E-6044 grants the City and Chamber of Commerce of Alexandria, La., and numerous other cities, chambers of commerce and state organizations in Louisiana, Alabama, Texas, Mississippi, Florida, Georgia, and Virginia leave to intervene in the New England-Southern States Merger Investigation. (Jan. 18.)

E-6045 denies petition of the Postmaster General for reconsideration of Board order No. E-5793 in the matter of the compensation for air transportation of mail by Chicago and Southern Air Lines over its Latin American route. (Jan. 18.)

E-6046 authorizes Pan American World Airways to suspend service temporarily at Philadelphia, Pa., until 60 days after final decision by the Board in the Philadelphia-Transatlantic Service case. (Jan. 21.)

E-6047 grants Alaska Airlines exemption for 1 year beginning Jan. 21, 1952, from the provisions of sec. 401 (a) of the Act and sec. 292.1, so as to permit it to engage in interstate air transportation of persons and property, wholly within the Territory of Alaska, without limitation as to regularity and frequency of service, pursuant to contracts with any department of the Military Establishment. (Jan. 21.)

E-6048 approves certain agreements involving Pan American-Grace Airways, and Pan American World Airways, various other air carriers, and other carriers, relating to intercompany arrangements. (Jan. 22.)

E-6049 grants the County of Sullivan, the Monticello-Sullivan County Airport, various cities, chambers of commerce, and the Tri-Cities Aviation Council of the County of Broome, New York, leave to intervene in the matter of the application of Robinson Airlines Corporation for renewal of its certificate for route No. 94. (Jan. 23.)

E-6050 dismisses complaints of the Flying Tiger Line, Slick Airways and Trans World Airlines in the matter of a proposal by American Airlines, The Flying Tiger Line, and United Air Lines to base freight charges on actual weight regardless of cubical dimensions. (Jan. 24.)

E-6051 grants Delta Air Lines leave to intervene in the matter of the application of Central Airlines for renewal of its temporary certificate for route No. 91. (Jan. 24.)

E-6052 denies application of California Helicopter Company for a temporary exemption under sec. 416 (b) of the Act so as to conduct air transportation in rotary wing aircraft to and from any points within a radius of 85 miles of San Francisco International Airport; grants Western Air Lines leave to intervene. (Jan. 24.)

E-6053 grants Trans-Texas Airways exemption, with stated provision, until March 31, 1952, from the terms and conditions of its temporary certificate so as to permit the operation of flights serving the route segment between Fort Stockton and El Paso, via intermediate points Pecos and Marfa-Alpine. (Jan. 25.)

E-6054 opinion and order fix and determine final mail rates to be paid Los Angeles Airways, on and after Oct. 1, 1947, over its entire system. (Jan. 25.)

E-6055 orders Hawaiian Airlines, Ltd., to show cause why the Board should not establish the mail rates set forth in an attached statement, over its entire system. (Jan. 25.)

E-6056 denies application of Jacob Freed Adelman, d/b/a Hemisphere Transport, for an exemption so as to permit, among other things, transfer of its Letter of Registration No. 1148 to Hemisphere Air Transport, Inc., without prejudice to its renewal subsequent to the Board's disposition of its application (Doc. No. 3869) in the Investigation of Air Services by Large Irregular Carriers, etc., case. (Jan. 25.)

E-6057 denies application of A. R. Johansen, partner, Sourdough Air Transport (Doc. No. 3200), for an exemption so as to permit, among other things, transfer of its Letter of Registration No. 1282 to Sourdough Air Transport, Inc., without prejudice to its renewal subsequent to the Board's disposition of Sourdough's application (Doc. No. 3933) in the Investigation of Air Services by Large Irregular Carriers, etc., case. (Jan. 25.)

E-6058 denies application of Stanley Jackson, d/b/a Royall Air Service and Royal Air Service, Inc., (Doc. No. 5158), for an exemption so as to permit, among other things, transfer of its Letter of Registration No. 556 to Royal Air Service, Inc., without prejudice to its renewal, subsequent to the Board's disposition of Royall's application (Doc. No. 3806) in the Investigation of Air Services by Large Irregular Carriers, etc., case. (Jan. 25.)

E-6059 dismisses application of William R. Robinson, Howard B. Robinson, and Lionel A. Mobley, d/b/a Peninsular Air Transport (Doc. No. 3576) insofar as it requests relief from Part 42 of the Civil Air Regulations; denies remainder of Peninsular's application, without prejudice to its renewal, subsequent to the Board's disposition of its application (Doc. No. 3868) in the Investigation of Air Services by Large Irregular Carriers, etc., case. (Jan. 25.)

E-6060 denies applications of C. N. Shelton and E. J. Averman, Jr. (Doc. No. 4268) for modification of order No. E-4044, without prejudice to their renewal subsequent to the Board's disposition of application of Aero Finance Corporation (Doc. No. 3945) in the Investigation of Air Services by Large Irregular Carriers, etc., case. (Jan. 25.)

E-6061 denies petition of Pan American World Airways for reconsideration of Board order No. E-5999 which consolidated into one proceeding Dockets Nos. 1706 and 2375; consolidates additional Dockets Nos. 1666 and 4021 into the proceeding to be known as the Transatlantic Final Mail Rate case. (Jan. 28.)

E-6062 dismisses proceeding of investigation and suspension instituted by Board order No. E-6018 in the matter of coach fares proposed by Trans World Airlines and United Air Lines between Chicago, Ill., and New York, N. Y./Newark, N. J. (Jan. 28.)

E-6063 opinion and order in the Southwest Renewal—United Suspension case amend certificates of United Air Lines for route No. 1, and Southwest Airways Company for route No. 76; deny applications of Southwest for extension to Salinas, Calif., and Klamath Falls, Oreg., and suspend service by United to Santa Barbara, Monterey, Red Bluff, and Eureka, Calif. (Jan. 29.)

E-6064 orders Frontier Airlines and Challenger Airlines Company to show cause why the Board should not establish certain

temporary mail rates from Oct. 11, 1949, through May 31, 1950, for Challenger, and from June 1, 1950, through Sept. 30, 1951, for Frontier, over their entire systems. (Jan. 29.)

E-6065 grants Mid-Continent Airlines leave to intervene in the matter of the applications by the City of Clinton, Iowa, and Clinton Airport Commission for amendment of the certificates of Braniff Airways, and Ozark Airlines. (Jan. 29.)

E-6066 grants the Postmaster General leave to intervene in the matter of the application of Civil Memorial Airport Authority for amendment of the certificate of Ozark Airlines. (Jan. 29.)

E-6067 denies motion of Braniff Airways to dismiss its application in Docket No. 9, (Jan. 29.)

E-6068 approves agreements involving National Airlines, and Aerolineas Argentinas FAMA, various other air carriers, and other carriers, relating to intercompany arrangements. (Jan. 30.)

E-6069 grants Central Airlines temporary exemption from the provisions of section 401 (a) of the Act so as to permit it to engage in air transportation of persons, property and mail between Dallas, Texas, and Ada, Okla., via intermediate points Sherman-Denison, Texas, Durant and Ardmore, Okla., until 60 days after final decision of the Board in the Central Certificate Renewal case, Docket No. 4083. (Jan. 30.)

E-6070 extends from Dec. 31, 1951, to Dec. 31, 1952, approval of agreement between Northwest Airlines and Hong Kong Airways, Ltd., relating to the charter of aircraft. (Jan. 30.)

E-6071 institutes investigation into activities and operations of Intra-Mar Air Freight Corp., and Intra-Mar Shipping Corp., to determine whether they are or have been engaging in unauthorized air transportation; orders preservation of pertinent records since Oct. 1, 1949, and that proceeding be assigned for public hearing before an examiner of the Board at a time and place to be designated. (Jan. 30.)

E-6072 extends until April 1, 1952, the time for complying with the terms of the conditional approval of agreement, order No. E-5098, in the matter of the Universal Air Travel Plan filed between American Airlines, and various other air carriers, and foreign air carriers, relating to credit arrangements. (Jan. 30.)

E-6073 approves IATA Resolution No. 329/157 (C.A.B. No. 2700 R-5-23), in the Free and Reduced-Rate Transportation case, denies petition of Pan American World Airways insofar as it requests relief from the Board's decision (order No. E-5677) disapproving provision for privileged transportation of cargo agents. (Jan. 31.)

E-6074 orders Mid-West Airlines (formerly Iowa Airplane Company, Inc.) to show cause why the Board should not establish certain temporary mail rates on and after Feb. 1, 1952, over its entire system. (Jan. 30.)

E-6075 fixes certain temporary mail rates for Challenger Airlines Company from Oct. 11, 1949, through May 31, 1950, and for Frontier Airlines from June 1, 1950, through Sept. 30, 1951, over their entire systems. (Jan. 31.)

E-6076 orders Northwest Airlines to show cause why the Board should not establish certain temporary mail rates on and after January 1, 1952, over its certificated domestic routes, and between the United States and terminal points in Canada. (Jan. 30.)

E-6077 orders Northwest Airlines to show cause why the Board should not establish certain temporary mail rates on and after Jan. 1, 1952, over its overseas and foreign routes. (Jan. 30.)

E-6078 in the Kenai Peninsula Service case, extends until further order of the Board the effective date of the certificate issued to Christensen Air Service (E-5925) authorizing air transportation between Seward and Anchorage, Alaska. (Jan. 31.)

E-6079 opinion and order in the West Coast Common Fares case terminate investigation instituted by order E-4431. (Jan. 31.)

E-6080 consolidates into Docket No. 5258 the joint application of Colonial Airlines and National Airlines requesting approval of a preliminary agreement of merger in the New England-Southern States Merger Investigation. (Feb. 1.)

E-6081 approves agreements involving Pan American-Grace Airways and Lloyd Aereo Boliviano, various other air carriers, and other carriers, relating to intercompany arrangements. (Feb. 1.)

E-6082 approves agreements involving National Airlines and Central Airlines, various other air carriers, and other carriers, relating to intercompany arrangements. (Feb. 1.)

E-6083 approves certain agreements involving Trans World Airlines and Pioneer Air Lines, various other air carriers, and other carriers, relating to intercompany arrangements. (Feb. 4.)

E-6084 grants the Department of Defense leave to intervene in the matter of the application of Central Airlines for renewal of its temporary certificate for route No. 81. (Feb. 4.)

E-6085 authorizes, with stated provision, Central Airlines to omit service to Durant, Okla., on route No. 81 until such time as the Eaker Airfield is adequate for its use during hours of darkness. (Feb. 4.)

E-6086 stays the Panama Management Agreement Proceeding for a period of 30 days. (Feb. 4.)

E-6087 orders Delta Air Lines to show cause why the Board should not establish the mail rates set forth in an attached statement, over its entire system. (Feb. 4.)

E-6088 grants United Air Lines leave to withdraw its petition for reconsideration of order No. E-5884 in the matter of the Acquisition of Mid-West Airlines, Inc., by Purdue Research Foundation. (Feb. 4.)

E-6089 grants the Post Office Department, Eastern Air Lines, and Braniff Airways leave to intervene in the matter of the application of Trans-Texas Airways for renewal of segments 2 and 6 of route No. 82. (Feb. 4.)

E-6090 in the matter of the application of All American Airways to alter, amend, or modify its certificate for route No. 97 with respect to expiration date and route pattern, orders certain severances and consolidations, and institutes an investigation as requested in Docket No. 5198, to determine whether public convenience and necessity require stated temporary suspensions of service of American Airlines on routes Nos. 4, 25, and 7; of Capital Airlines on routes Nos. 34 and 55, and of Trans World Airlines on route No. 2; otherwise denies. (Feb. 4.)

E-6091 denies petition of National Airlines and request of Eastern Air Lines for leave to intervene in the Panama Management Agreement Proceeding. (Feb. 5.)



# Suspensions and Revocations . . . CAB

## Suspensions

from Feb. 8 until successful completion of a written examination and flight test—John L. Crawford, Tyn-dall Field, Fla. (Private).

Operating an aircraft in a control zone when the weather was below minimums without having an instrument rating—30 days from March 1—Hugh H. Murray, Raleigh, N. C. (Private).

Failure to make timely report of an accident—2 months from March 1—D. R. Dobbins, Ft. Lauderdale, Fla. (Private).

Low flying over isolated buildings—10 days from Feb. 9—Walter Curtis, Chicago, Ill. (Student).

Operating an unairworthy aircraft, flying VFR during instrument conditions, and other violations—4 months from Feb. 9—William O. Fenske, Blue Earth, Minn. (Private).

Low flying over a congested area and continuing a flight into worsening weather (The weather became so bad that he lost his way and crashed.)—90 days from Feb. 23—Tony Hurin, Tony, Wis. (Private).

Operating an aircraft in violation of the terms of a ferry permit and failing to observe traffic control instructions—90 days from Feb. 6—Gordon G. Michaelis, Albert Lea, Minn. (Private).

Failure to observe traffic control instructions and failure to conform to the traffic pattern for the airport—90 days from Feb. 19—Phillip H. Rookus, Grand Rapids, Mich. (Private).

Operating an aircraft that had not been given a periodic inspection and was in an unairworthy condition—6 months from Jan. 29—Wallace E. Gardiner, Phillips, Wis. (Commercial).

Low flying over a congested area of Fort Worth, Tex.—6 months from Sept. 12—Alvin Boyle, Mineral Wells, Tex. (Private).

Operating an aircraft within a control zone during instrument conditions without receiving permission from traffic control—30 days from Feb. 11—Joe D. Vaughn, Tulia, Tex. (Private).

Operating an aircraft that had not been given an annual inspection and flying after sunset when the aircraft did not carry position lights—3 months from Feb. 18—Frank O. Stoner, Parkin, Ark. (Private).

Operating an aircraft other than one for which he was rated and failing to notify the CAA of his change in address—60 days from Feb. 16—James R. Hough, Shreveport, La. (Private).

Operating an aircraft during instrument conditions when he did not have an instrument rating, operating an aircraft within a control zone without filing a flight plan or receiving permission from traffic control, and other violations—5 months from Feb. 6—Samuel D. Lobmaster, Fort Leonard Wood, Mo. (Private).

Low flying over a congested area—60 days from Feb. 14—Elmer B. Sachs, Baldwin Park, Calif. (Private).

Operating an aircraft during instrument conditions when he did not hold an instrument rating, failing to take appropriate pre-flight action before starting his flight, and other violations—4 months from Feb. 22—Walter B. Paner, Cincinnati, Ohio. (Private).

Operating an aircraft with no airworthiness certificate—90 days from Jan. 29—Earl Finley, Napa, Calif. (Private).

Taking off from a county road without taking the necessary precautions with respect to vehicular traffic (The pilot misjudged his take-off distance and struck a parked car.)—6 months from Jan. 29—Homer Gut-chow, Dos Polos, Calif. (Commercial).

Performing acrobatics within a civil airway and within the traffic pattern for the Orange County Airport, Santa Ana, Calif. (The pilot failed to recover from a slow roll over the airport runway and crashed.)—6 months from June 11, 1951—Walter E. MacFar-lane, Santa Ana, Calif. (Commercial).

(Continued on page 49)

Low flying and performing acrobatics over a congested area and within a civil airway—6 months from Dec. 15—Leslie Veal, Lexington, Ky. (Private).

Low flying over riding stables in San Antonio, Tex.—90 days from Dec. 20—William R. Cooper, West Sacramento, Calif. (Private).

Operating an aircraft during instrument weather when he did not hold an instrument rating, and other violations—60 days from Nov. 16—Thomas L. Smith, Okarche, Okla. (Commercial).

Operating an aircraft during instrument conditions when he did not hold an instrument rating, and other violations—15 days from Dec. 11—Salvatore P. DeSalvo, Jr., Chicago, Ill. (Commercial).

Low flying and operating an aircraft in a careless and reckless manner (The engine stalled and the aircraft crashed when a turn was attempted at a low altitude.)—6 months from Dec. 11—William G. Reid, Wenatchee, Wash. (Private).

Operating an aircraft that had not been given an annual inspection—30 days from Dec. 18—Paul F. Wenatchee, Wash. (Private).

Operating an uncertificated, newly rebuilt aircraft when the aircraft was not in airworthy condition, and other violations (The landing gear collapsed when a landing was attempted.)—6 months from Feb. 3—Rex W. Wiseman, U.S.N.T.C., Great Lakes, Ill. (Student).

Piloting an aircraft in formation with a scheduled air carrier aircraft and in such proximity as to create a collision hazard—6 months from Feb. 9—Raymond J. Spaulding, Meadville, Pa. (Private).

Buzzing the Bristol Municipal Airport, Bristol, Vt., and landing at the airport during the hours of darkness without displaying position lights—3 months from Feb. 15—George G. Brooks, Burlington, Vt. (Student).

Careless and reckless operation of an aircraft in attempting to land in an unsuitable field (While attempting to land in a farmer's field he collided with an automobile and an electric light pole, demolishing the aircraft.)—6 months from Feb. 15—Dennis B. Thompson, York, Pa. (Student).

Low flying in the vicinity of Holsapple, Pa., a congested area—3 months from Feb. 15—John Melker, Johnstown, Pa. (Commercial).

Buzzing the congested residential area of White Township, Pa.—6 months from Nov. 29—George L. Shaffer, New Brighton, Pa. (Private).

Operating an aircraft within a defense zone without filing a flight plan—60 days from Feb. 19—William W. Hayden, Birmingham, Ala. (Private).

While approaching for a landing, cutting off the right-of-way of another aircraft attempting to land—30 days from Feb. 22—John J. Perrilla, Opa Locka, Fla. (Private).

Landing at the Raleigh Municipal Airport during an air show when the field was marked "closed"—30 days from Feb. 16—Fred Darlington, III, Burlington, N. C. (Private).

Low flying and performing acrobatics at a low altitude in the vicinity of North Anderson, S. C.—6 months from Feb. 16—James R. Hammett, Starr, S.C. (Student).

Landing at the Raleigh Municipal Airport during an air show when the field was marked "closed" and failure to have pilot and medical certificates in his possession—75 days from Feb. 11—Lacy W. Smith, Jr., Greensboro, N. C. (Private).

Landing at the Raleigh Municipal Airport during an air show when the field was marked "closed"—60 days from Feb. 11—Ralph B. Chrismon, Elon College, N. C. (Commercial).

Low flying over Panama City Beach, Fla., and performing acrobatics while carrying a passenger when the occupants were not equipped with parachutes—

E-6092 institutes an investigation of the operations in air transportation of North American Food Carriers, Inc., Condor de las Andes Venezolano de Aviacion and of interlocking relationships existing between North American Food Carriers and The Unit Export Company, Inc.; orders preservation of pertinent documents and records of interested parties, and that the proceeding be assigned for hearing before an examiner of the Board at a time and place to be designated. (Feb. 5.)

E-6093 orders that the record in the matter of the mail pay of Pan American World Airways over its routes between United States and points in Alaska be reopened for the limited purpose of receiving additional evidence regarding the rates for the period beginning July 1, 1951; orders that the reopened proceeding be assigned for further public hearing before an examiner of the Board at a time and place to be designated. (Feb. 5.)

E-6094 denies motion of Counsel for Air Transport Associates, Inc., and 17 other carriers, for extension of time for filing petitions for reconsideration of order No. E-6017, in the matter of the investigation of air services by Large Irregular Carriers and Irregular Transport Carriers. (Feb. 5.)

E-6095 orders consolidation into the Frontier Route 93 Renewal case, for hearing, of certain applications of Frontier Airlines, Trans World Airlines, and Bonanza Air Lines, and the investigation concerning suspension of American Airlines' authority to serve Douglas, Ariz. (Docket 5394). (Feb. 5.)

E-6096 denies petitions of Chicago, Burlington & Quincy Railroad Company, and 5 other rail carriers, for leave to intervene in the matter of the application of Mid-West Airlines for renewal of its temporary certificate; grants them leave to appear as amici for the purpose of filing a brief, and extends from Feb. 7, to Feb. 14, 1952, the time for filing briefs. (Feb. 6.)

E-6097 orders Pan American World Airways to show cause why the Board should not establish certain temporary mail rates, over its Latin American routes, for the period April 1, 1948 through Nov. 30, 1951. (Feb. 8.)

E-6098 grants Empire Air Lines, United Air Lines, Western Air Lines, Air Line Dispatchers Association, A.F. of L., Air Line Pilots Association, Int'l., and the International Association of Machinists leave to intervene in the matter of the application of West Coast Airlines for approval of an agreement to purchase all the outstanding stock of Empire Air Lines. (Feb. 8.)

E-6099 dismisses application of Vineland Flying Service for a certificate to engage in nonscheduled air transportation of passengers and general commodities from Vineland, N. J., and Philadelphia, Pa.; to specified points in those and other states. (Feb. 8.)

E-6100 dismisses application of Armored Motor Service Co., Inc., for a certificate to engage in interstate air transportation of valuables, money, currency, and checks and related papers, and other articles requiring special protection, between points in 14 southern and southwestern states. (Feb. 8.)

E-6101 dismisses amended application of Bekins Van Lines Co. for a certificate, or an exemption order, to engage in nonscheduled air transportation of household goods and allied commodities between points in the United States and the District of Columbia. (Feb. 8.)

E-6102 dismisses application of Lt. Colonel John C. L. Adams and Albert E. S. Adams for a certificate to engage in sightseeing service by air, and secondarily, the transportation of property and mail between points in the Canal Zone. (Feb. 8.)

E-6103 grants Riddle Aviation Company an exemption until Oct. 31, 1952, from sec. 401 (a) of the Act and Part 295 so as to permit it to engage in interstate, overseas, and foreign air transportation of persons and property, pursuant to contracts with any department of the Military Establishment. (Feb. 11.)

E-6104 institutes investigation of and suspends through May 14, 1952, a rule proposed by Braniff Airways and 7 other air carriers with respect to a storage valuation charge on shipments having a certain declared value which are undelivered after the expiration of a 24-hour period. (Feb. 11.)

E-6105 supplemental opinion and order in the Southern Service to the West case approve certain through service by interchange of aircraft between Eastern Air Lines, Braniff Airways, and Trans World Airlines; amend certificate of Eastern for route No. 10. (Feb. 11.)

E-6106 opinion and order in the National-Eastern Interchange Agreement matter deny joint application of National Airlines and Eastern Air Lines for approval of a proposed interchange agreement of aircraft at New Orleans so as to provide through service between points in south Florida and south Texas. (Feb. 11.)

E-6107 vacates order No. E-5803 and terminates proceeding in the matter of the integration of the routes of Continental Air Lines and Mid-Continent Airlines. (Feb. 11.)

E-6108 denies petition of Conner Air Lines for reconsideration of Board order No. E-6010 in the matter of the application of Conner for an exemption. (Feb. 11.)

E-6109 denies application of The Council on Student Travel for temporary authority to act as an indirect passenger air carrier on a series of 15 flights from the United States to Europe between June 1 and July 15, 1952, and 25 flights from Europe to the United States between Aug. 15 and Oct. 1, 1952. (Feb. 11.)

E-6110 denies request of National Airlines for leave to file a supplemental memorandum discussing the import of a certain decision of the United States Court of Appeals for the D. C. Circuit upon the proceeding in the Southern Service to the West case. (Feb. 11.)

E-6111 dismisses complaint of George A. Woodward, Jr., and C. H. Laughlin against the Riddle Aviation Co. (Feb. 11.)

E-6112 dismisses proceeding of investigation of stock acquisitions in National Airlines by W. R. Grace & Co., instituted by Board order No. E-3110. (Feb. 11.)

E-6113 grants Southern Airways a temporary exemption so as to permit it to engage in air transportation of persons, property, and mail to and from Gulfport-Biloxi, Miss., as an alternate intermediate point to Hattiesburg on segment 5 of route No. 98, until 60 days after final order of the Board in Docket No. 5199. (Feb. 13.)

E-6114 institutes investigation of and suspends through May 17, 1952, certain coach fares proposed by American Airlines between Washington, D. C., Dallas, Tex., and Los Angeles, Calif., and orders proceeding be assigned for hearing before an examiner of the Board at a time and place to be designated. (Feb. 13.)

(Continued on page 48)

# Regulations of The Administrator

Through May 1, 1952

Note: Regulations of the Administrator marked with an asterisk (\*) on the list given below may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C., at the prices indicated. Remit check or money order, made payable to the Superintendent of Documents, directly to the Government Printing Office. Copies of amendments may be obtained free of charge from the Office of Aviation Information, CAA, Washington 25, D. C., or may be found in the Federal Register for the dates indicated in parentheses. Copies of the Federal Register are obtainable from the Superintendent of Documents.

## Organization

\*Part 400—Organization and Functions. (10c.)

Amendments: 1 (July 11, 1951), 2 (August 14, 1951), 3 (Jan. 8, 1952), 4 (Jan. 17, 1952).

## Procedures

\*Part 405—General Procedures. (5c.)

\*Part 406—Certification Procedures. (10c.)

\*Part 407—Recordation Procedures. (5c.)

\*Part 408—Enforcement Procedures. (5c.)

Amendments: 1 (Available from CAA.), 2 (October 23, 1951).  
\*Part 410—Delegation Option Procedures for Certification of Small Airplanes. (5c.)

## Rules

### Airmen

\*Part 450—Inter-American Aviation Training Grants. (5c.)

### Aircraft

\*Part 501—Aircraft Registration Certificates. (5c.)

\*Part 502—Dealers' Aircraft Registration Certificates. (5c.)

\*Part 503—Recordation of Aircraft Ownership. (5c.)

\*Part 504—Recordation of Encumbrances Against Specifically Identified Aircraft Engines. (5c.)

\*Part 505—Recordation of Encumbrances Against Aircraft Engines, Propellers, Appliances, or Spare Parts. (5c.)

Part 506—Airworthiness Directives Recordation. (Available without charge from CAA.)

Part 514—Technical Standard Orders — C Series — Aircraft Components. (October 12, 1951.)

### Airports

\*Part 550—Federal Aid to Public Agencies for Development of Public Airports. (10c.)

Amendments: 1-16 (Available from CAA.)

\*Part 555—Acquisition of Government-owned Lands for Public Airports Purposes. (5c.)

\*Part 560—Reimbursement for Damage to Public Airports by Federal Agencies. (10c.)

Amendments: 1-2 (Available from CAA.)

\*Part 570—Rules of Washington National Airport. (5c.)

Amendments: 1-2 (Available from CAA.)

\*Part 575—Federal Civil Airports on Canton and Wake Islands. (5c.)

Part 580—Anchorage Airport and Fairbanks Airport. (December 12, 1951.)

### Air Navigation

\*Part 600—Designation of Civil Airways (including amendments 1 through 18). (10c.)

Amendments: 19-63 (Available from CAA.)

\*Part 601—Designations of Control Areas, Control Zones and Reporting Points (including amendments 1 through 22). (15c.)

Amendments: 23-69 (Available from CAA.)

Part 608—Danger Areas (October 31, 1951).

Amendments: 1 (Oct. 31, 1951), Correction (Nov. 8, 1951), 2 (Nov. 15, 1951), 3 (Nov. 16, 1951), 4 (Nov. 28, 1951), 5 (Nov. 29, 1951), 6 (Dec. 6, 1951), 7 (Dec. 12, 1951), 8 (Jan. 8, 1952), 9 (Jan. 8, 1952), 10 (Jan. 24, 1952), 11 (Jan. 25, 1952), 12 (Jan. 31, 1952), 13 (Feb. 8, 1952), 14 (Feb. 21, 1952), 15 (Mar. 4, 1952), 16 (Mar. 7, 1952), 17 (Mar. 13, 1952), 18 (Mar. 20, 1952), 19 (Apr. 4, 1952), 20 (Apr. 10, 1952), 21 (Apr. 17, 1952).

Part 609—Standard Instrument Approach Procedures. (July 27, 1951.)

Amendments: 1 (August 25, 1951), Correction (October 17, 1951), 2 (Nov. 6, 1951), 3 (Nov. 3, 1951), 4 (Nov. 21, 1951), Correction (Nov. 22, 1951), 5 (Dec. 11, 1951), 6 (Dec. 13, 1951), 7 (Dec. 18, 1951), 8 (Dec. 22, 1951), 9 (Jan. 17, 1952), 10 (Jan. 1952), 11 (Jan. 22, 1952), 12 (Feb. 5, 1952), 13 (Feb. 16, 1952), 14 (Mar. 4, 1952), 15 (Mar. 13, 1952).

Part 610—Minimum En Route Instrument Altitudes. (July 27, 1951, corrected September 21, 1951), Amendments: 1 (August 4, 1951), 2 (August 24, 1951), 3 (Nov. 2, 1951), 4 (Feb. 2 and 9, 1952), 5 (Mar. 21, 1952), 6 (Mar. 26, 1952), 7 and 8 (Apr. 5, 1952), 9 (Apr. 15, 1952).

\*Part 612—Aeronautical Fixed Communications. (5c.) Correction (Apr. 4, 1952), Amendment 1 (Apr. 15, 1952).

\*Part 617—Airport Traffic Control Rules. (April 21, 1951.)

\*Part 620—Security Control of Air Traffic. (5c.)

Amendments: 1-5 (Available from CAA.)

\*Part 625—Notice of Construction or Alteration. (5c.)

### Miscellaneous

\*Part 635—Reproduction and Dissemination of Current Examination Materials. (Available without charge from CAA.)

The Civil Aeronautics Board last month ordered Intra-Mar Shipping Corp. and Intra-Mar Air Freight Corp. to cease and desist from operating as international air freight forwarders without appropriate authorization from the Board.

# Scheduled Air Carrier Operations

[Source CAB Form 41]

## Domestic: February 1952

Operator	Revenue miles	Revenue passen- gers	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown		
						Express	Freight	United States mail
Trunk Lines								
American Airlines	6,257,355	316,992	175,982	274,657	64.07	721,848	3,246,699	1,354,928
Braniff Airways	980,732	62,273	21,803	36,343	59.99	71,959	157,152	140,929
Capital Airlines	1,992,806	125,538	37,235	80,911	46.02	190,463	267,699	174,819
Chicago & Southern Air Lines	726,408	36,986	14,035	23,965	58.56	60,482	87,852	58,147
Colonial Airlines	284,369	16,217	4,125	9,274	44.48	7,502	12,371	10,485
Continental Airlines	596,583	24,382	9,160	19,386	47.25	14,697	52,016	47,243
Delta Air Lines	1,521,742	74,388	37,266	59,443	62.69	94,396	336,339	169,982
Eastern Air Lines	5,063,726	280,946	145,063	231,246	62.73	275,150	506,348	491,869
Inland Air Lines	231,358	8,292	3,316	5,515	60.13	5,821	13,944	19,066
Mid-Continent Airlines	655,885	31,355	9,567	18,178	52.63	17,145	46,031	34,234
National Airlines	1,448,071	62,296	44,167	65,052	67.89	61,411	412,289	123,298
Northeast Airlines	295,922	21,294	4,030	8,692	46.36	15,796	11,837	12,320
Northwest Airlines	997,450	48,879	31,949	56,771	56.28	136,755	230,506	208,650
Trans World Airlines	4,008,083	150,429	110,311	165,976	66.46	456,716	1,272,195	947,987
United Air Lines	5,089,966	212,315	134,976	215,217	62.72	684,306	2,181,427	1,784,273
Western Air Lines	745,846	47,171	16,886	28,291	59.69	32,853	51,735	99,304
Trunk Total	30,896,303	1,519,753	799,871	1,298,917	61.58	2,847,300	8,886,440	5,687,534
Feeder Lines								
All American Airways	229,048	9,458	1,289	4,810	26.80	9,602	0	4,702
Bonanza Air Lines	73,078	2,473	633	1,599	39.59	179	1,136	530
Central Airlines	114,333	3,599	434	2,401	18.08	858	2,046	1,977
Empire Air Lines	96,719	3,137	610	2,031	30.03	1,051	0	2,371
Frontier Airlines	352,985	7,812	2,020	7,413	27.25	5,165	26,139	8,007
Helicopter Air Service	26,373	0	0	0	—	0	0	2,322
Lake Central Airlines	93,158	1,869	276	1,867	14.78	4,129	0	1,218
Los Angeles Airways	19,950	0	0	0	0	0	0	3,690
Mid-Continent Airlines	67,874	2,965	564	1,559	36.18	2,322	2,873	1,401
Mid-West Airlines	53,286	159	23	213	10.80	0	0	699
Ozark Airlines	189,721	3,707	606	4,743	12.78	3,504	0	2,407
Piedmont Aviation	347,505	12,998	3,013	7,298	41.29	4,945	9,585	5,434
Pioneer Air Lines	305,660	12,633	3,285	7,336	44.78	3,095	16,102	9,863
Robinson Airlines	102,323	5,015	788	2,142	36.79	2,614	2,564	2,032
Southern Airways	255,794	8,615	1,468	5,372	27.33	6,883	0	7,095
Southwest Airways	183,039	8,604	1,651	3,844	42.95	3,235	16,680	6,651
Trans-Texas Airways	213,960	5,209	1,182	4,493	26.30	2,515	5,983	4,934
West Coast Airlines	109,525	5,247	736	2,300	32.00	822	8,068	828
Wiggins, E. W. Airways	33,617	137	12	130	9.23	84	0	73
Wisconsin-Central Airlines	150,874	7,775	1,164	3,168	36.74	8,983	0	6,533
Feeder Total	3,018,822	101,412	19,754	62,719	31.50	59,989	91,182	72,900
Territorial Lines								
Caribbean-Atlantic Airlines	62,382	11,345	884	1,662	53.19	0	2,599	869
Hawaiian Airlines	249,899	25,062	3,235	5,232	61.83	6,893	55,447	2,036
Trans-Pacific Airlines	106,732	9,923	1,237	2,988	41.40	1,244	2,930	1,643
Territorial Total	419,013	46,330	5,356	9,882	54.20	8,140	60,883	4,548
Grand Total	34,384,138	1,667,495	824,981	1,371,518	60.15	2,915,429	9,038,508	5,764,982

## International and Overseas: February 1952

Operator	Revenue miles	Revenue passengers	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown			
						Express	Freight	United States mail	Parcel post
American Airlines	222,339	9,639	7,953	11,236	70.78	335	148,655	13,398	0
Braniff Airways	342,321	3,017	5,879	14,528	40.47	0	71,288	24,547	0
Chicago & Southern Air Lines	134,314	2,718	3,015	6,215	48.51	0	77,254	4,031	549
Colonial Airlines	45,976	1,816	1,436	2,340	61.37	0	3,940	1,611	48
Eastern Air Lines	243,435	6,738	9,324	14,406	64.72	0	70,955	33,706	0
National Airlines	68,704	9,615	2,482	3,968	62.55	3,318	13,512	1,360	1
Northwest Airlines	462,798	4,824	7,886	15,930	49.50	9,978	508,505	126,676	0
Pan American World Airways:									
Atlantic Division	1,109,750	21,962	30,276	53,717	56.36	0	944,642	381,530	98,423
Latin American Division	2,353,668	75,798	59,941	99,418	60.29	0	2,419,233	262,189	0
Alaska Operations	209,155	2,587	2,879	9,390	30.66	0	356,457	39,487	0
Pacific Operations	787,568	6,268	22,607	38,203	59.18	0	536,252	327,629	21,085
Pan American-Grace Airways	481,357	11,233	12,088	17,465	69.21	170,975	0	26,334	7,243
Trans World Airways	947,849	9,118	21,581	39,138	55.14	0	564,727	328,296	51,334
United Air Lines	245,500	3,708	9,186	12,884	71.30	0	45,452	64,273	0
Uruba, Medellin & Central Airways	7,892	310	102	158	64.56	0	2,444	0	0
<b>Total</b>	<b>7,662,626</b>	<b>169,351</b>	<b>196,635</b>	<b>338,996</b>	<b>58.01</b>	<b>184,606</b>	<b>5,763,316</b>	<b>1,635,067</b>	<b>178,683</b>

## Domestic: Passenger Miles Flown (Total revenue and nonrevenue, in thousands)

	January	February	Total
Trunk	879,152	686,220	1,565,372
Feeder	21,646	21,421	43,067
Territorial	5,851	5,494	11,345
<b>Total</b>	<b>906,649</b>	<b>713,135</b>	<b>1,619,784</b>

# Scheduled Air Carrier Operations

(Continued on Page 48)

## International and Overseas: January-February, 1952, 1951

Operator	Revenue miles January-February		Revenue passengers January-February		Revenue passenger- miles (000) January-February		Passenger seat-miles (000) January-February		Revenue passenger load factor (percent) January-February	
	1952	1951	1952	1951	1952	1951	1952	1951	1952	1951
American Airlines	464,510	465,063	19,907	19,284	16,152	15,168	23,650	24,750	68.30	61.28
Braniff Airways	706,983	506,863	5,934	4,319	11,559	8,507	29,998	21,553	38.53	39.47
Chicago & Southern Air Lines	270,965	265,617	5,248	5,022	6,050	5,149	12,529	12,116	48.29	42.50
Colonial Airlines	102,290	96,430	3,698	4,314	2,906	3,422	5,229	5,014	55.57	68.25
Eastern Air Lines	502,489	122,720	14,181	3,584	19,693	3,727	29,740	7,363	66.22	50.62
National Airlines	145,900	234,670	18,292	22,282	4,749	5,747	8,097	12,872	58.65	44.65
Northwest Airlines	983,938	941,632	9,969	8,815	16,256	15,844	33,486	34,190	48.55	46.34
Pan American World Airways:										
Atlantic Division	2,218,024	2,129,577	44,097	41,490	61,266	55,559	108,678	90,357	56.37	61.49
Latin American Division	4,805,808	4,489,739	144,782	131,512	121,812	104,481	203,238	166,177	59.94	62.87
Alaska Operations	426,388	334,031	5,702	5,023	6,398	5,397	18,754	15,223	34.12	35.45
Pacific Operations	1,632,106	1,423,046	12,394	10,439	44,251	34,659	79,272	68,143	55.82	50.86
Pan American-Grace Airways	980,344	930,994	20,670	18,753	22,183	20,038	35,523	33,902	62.45	59.11
Trans World Airways	1,992,430	1,803,690	17,954	13,753	44,246	37,463	82,559	80,476	53.59	46.55
United Air Lines	508,127	492,448	7,581	5,121	18,777	12,614	26,726	24,913	70.26	50.63
Uruba, Medellin & Central Airways	17,076	17,056	626	411	206	135	342	342	60.23	39.47
Total	15,757,378	14,253,576	331,035	294,122	396,504	327,910	697,821	597,391	56.82	54.89
Index (1951=100)	110.55	100.00	112.55	100.00	120.92	100.00	116.81	100.00	103.52	100.00

Operator	Ton-miles flown					
	Express and freight January-February		United States Mail January-February		Parcel post January-February	
	1952	1951	1952	1951	1952	1951
American Airlines	292,049	193,455	29,436	25,502	0	0
Braniff Airways	208,408	175,993	52,765	22,645	0	0
Chicago & Southern Air Lines	172,127	92,972	8,129	5,300	1,223	414
Colonial Airlines	6,114	7,128	2,973	1,836	101	299
Eastern Air Lines	137,131	23,296	72,630	16,333	0	0
National Airlines	40,012	46,151	2,472	1,834	1	0
Northwest Airlines	993,454	997,453	260,744	286,641	0	0
Pan American World Airways:						
Atlantic Division	1,900,300	1,572,901	745,581	568,042	178,834	145,055
Latin American Division	4,513,306	3,602,658	531,722	467,504	0	0
Alaska Operations	685,217	527,239	77,136	58,169	0	0
Pacific Operations	1,022,876	889,552	658,484	841,765	38,208	0
Pan American-Grace Airways	372,633	283,602	54,354	51,373	15,473	10,382
Trans World Airways	1,169,550	972,187	687,743	531,847	111,024	81,138
United Air Lines	98,213	82,702	126,304	128,980	0	0
Uruba, Medellin & Central Airways	6,230	9,821	0	0	0	0
Total	11,617,620	9,477,110	3,310,473	3,007,801	344,864	237,288
Index (1951=100)	122.59	100.00	110.06	100.00	145.34	100.00

## CAA Trains Japanese For Peacetime Flying

The same high standards of safety set by the U.S. Civil Aeronautics Administration will be the basis for Japanese civil aviation as a result of training now being given to six veteran Japanese pilots in this country.

Through the cooperation of the State Department, and with the Japanese government paying all costs, four officials of Japan's CAA and two Japanese airline pilots will be given refresher courses in piloting, to be followed by the standard training and refresher courses given U.S. CAA Aviation Safety Agents at the Aeronautical Training Center at Oklahoma City. Preliminary pilot refresher courses will be given at the Spartan School of Aeronautics.

The party departed Tokyo April 1, and consisted of Masao Kimura, Tadana Kameyama, Yukiaki Kawada and Kiyoshi Nishimura, who are Aeronautical Inspectors with the Japanese CAA; and Hide-maro Tominaga and Yoshikazu Etonaga, Japanese airline pilots. Edward V. Pettis, Chief Advisor of the Tokyo office of the CAA, accompanied the Japanese.

"These men have not flown since they were discharged from military service in 1945," A. S. Koch, Administrator of the CAA's International Region, said in discussing the training program. "Under terms of the surrender, they were not allowed to fly in Japan, but the State Department agreed that they should be trained and ready to assist in adminis-

## Civil Aviation Summarized

(Continued from page 42)

that is responsible for most accidents but human failings, just as in most automobile accidents. \* \* \*

"There are many stories about the potential and the growth of general aviation that are not told widely enough. Flying is a necessary part of our everyday lives—the fastest form of transportation ever devised.

"Make no mistake about it—aviation is here to stay. It will have its setbacks such as the unfortunate and unprecedented series of accidents in the Newark area. It will be severely criticized for being noisy and dangerous, but it will be a better industry because all of us in aviation will be forced to work harder and longer to improve it."

The Administrator concluded his remarks by asking the Ninety Nines to help the CAA reach its goal of providing a safer and better aviation industry to all. He also invited them, as individuals or as an organization, to feel free at any time to bring their problems, suggestions or criticisms to the CAA and that the CAA would do its utmost to help solve them.

ing the Japanese CAA as soon as the peace treaty becomes effective.

"The courses they will take with our specialists at the Training Center will require four months. They are the first Japanese to be given flight training in this country. Previously, the CAA has trained three air traffic controllers, and they are now back home in Japan instructing their countrymen in preparation for the resumption of Japanese control of civil aviation."

## CAA Gets Engines for Airline By Enlisting Aid from Abroad

International barriers were overcome by the Office of Aviation Defense Requirements of the Civil Aeronautics Administration, to obtain assistance from as far away as London for Northwest Airlines, hard hit by flood damage to its engine overhaul base at Holman Field, St. Paul.

When flood waters swamped the base, Northwest was confronted with a critical need of spare engines for its Boeing Stratocruisers. The airline applied to CAA's OADR for help. The R-4360 engines for the Stratocruisers are extremely scarce, and without spares, Northwest said, it would be forced to begin grounding the big planes on May 5.

OADR contacted officials of British Overseas Airways who happened to be in Washington and the visitors made arrangements with their London office to lend Northwest two engines from their short supply, one in New York and one in London. While domestic airlines are giving every assistance possible in the way of sharing spare parts and overhaul facilities, more complete engines were needed to tide Northwest over its present difficulty. To this end the United States Air Force agreed to waive formalities and make two spare engines available immediately, with a promise of possible further assistance.

Northwest's engine overhaul base at Holman Field was protected by a 5½-foot dike but water seeped under the dike and pushed up through the floor of the hangar.



## Helpful Publications

Publications listed below are on sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Order must be accompanied by money order or check made payable to the Superintendent of Documents.

### Flight Assistance

#### Airman's Guide and Flight Information

**Manual** ..... \$6 a year  
(The Airman's Guide, published every 2 weeks, contains three sections: Directory of Airports, Radio Facility Data, and Notices to Airmen. The Flight Information Manual supplements the Airman's Guide and is issued semiannually.)

### Airports

**Airport Buildings** ..... 20 cents  
(Problems of airport building design are discussed and several solutions suggested.)

**Airport Design** ..... 30 cents  
(Provides basic information on airport construction.)

**Airport Landscape Planting** ..... 15 cents  
(Provides practical information on how to improve the appearance of an airport.)

**Airport Turfing** ..... 25 cents  
(Describes various problems involved and presents methods used in establishing and maintaining a good turf.)

**Seaplane Facilities** ..... 25 cents  
(Answers problems posed by the planning and construction of seaplane bases.)

**Small Airports** ..... 15 cents  
(Answers to many problems confronting communities or individuals who want to build a small airport.)

**Standard Specifications for Construction of Airports** ..... \$2.25  
(Contains specification items for construction of airports and air parks. Covers clearing and grubbing, grading, drainage, paving, lighting, turfing, and incidental construction.)

### Flight Training

**Aircraft Powerplant Handbook** ..... \$1.50  
(For students, mechanics, pilots, and engineers who have only superficial knowledge of aircraft powerplant fundamentals.)

**Facts of Flight** ..... 50 cents  
(A nontechnical manual, with chapters on airplane flight, stalls, spins, airplane structure, airplane engines, flying the plane, airport traffic, seaplanes, and safety in flight.)

**Flight Instruction Manual** ..... \$1.50  
(A complete text on flight training for student and instructor. Includes acrobatic maneuvers.)

**Path of Flight** ..... 75 cents  
(Practical information about basic navigation of aircraft, presented in brief form for the use of the private pilot.)

**Questions and Answers for Private Pilots** ..... 15 cents  
(A collection of the questions and answers upon which the private pilot written examination is based.)

**Realm of Flight** ..... 60 cents  
(Presents practical information about the effect of atmospheric conditions upon flight.)

**Personal Aircraft Inspection Manual** ..... 55 cents  
(Contains information dealing with the fundamentals of inspection and provides a general maintenance guide for the owners of personal type aircraft.)

### Miscellaneous

#### ANC Procedures for the Control of Air

**Traffic** ..... 45 cents  
(Officially approved manual of air traffic control procedures adopted for use by civil and military air traffic control personnel. These procedures are required to be followed by all civil controllers holding certificates under Part 26 of the CAR.)

**Personal-Aircraft Owner's Guide** ..... 15 cents  
(A collection of the questions most frequently asked by the owners of personal aircraft.)

**Terrain Flying** ..... 25 cents  
(Describes the special problems and hazards encountered in flying over various kinds of terrain and proper precautions.)

**The Air Fair** ..... 20 cents  
(Gives detailed help in planning and operating an air fair.)

**The Flying Club** ..... 15 cents  
(Planning and organization material so arranged as to permit "tailoring" to fit local conditions.)

## Scheduled Air Carrier Operations

(Continued on Page 49)

### Domestic: January-February 1952, 1951

Operator	Revenue miles January-February		Revenue passengers January-February		Revenue passenger- miles (000) January-February		Passenger seat- miles (000) January-February	
	1952	1951	1952	1951	1952	1951	1952	1951
<b>Trunk Lines</b>								
American Airlines	12,944,403	9,924,074	660,427	612,896	374,735	310,338	568,208	422,795
Braniff Airways	2,024,774	1,826,008	128,060	112,902	44,365	38,278	75,054	64,203
Capital Airlines	4,030,827	3,227,226	254,673	215,616	76,936	66,086	163,149	121,643
Chicago & Southern Air Lines	1,482,602	1,209,069	73,579	57,956	28,520	21,348	49,060	34,717
Colonial Airlines	576,824	537,774	33,273	31,900	8,454	8,240	18,732	15,805
Continental Air Lines	1,232,591	982,182	50,902	35,985	19,382	13,194	40,049	28,368
Delta Air Lines	3,072,767	2,700,367	152,425	125,613	76,020	63,367	119,186	99,604
Eastern Air Lines	10,273,629	9,626,827	559,985	534,920	287,178	275,193	459,373	431,175
Inland Air Lines	478,688	463,587	17,381	14,244	7,052	5,529	11,514	11,117
Mid-Continent Airlines	1,319,228	1,203,378	61,420	55,620	18,791	16,776	35,964	30,108
National Airlines	3,002,554	2,562,219	127,120	102,440	89,833	73,877	133,129	110,170
Northeast Airlines	629,901	616,356	45,812	55,773	8,792	10,404	18,765	19,078
Northwest Airlines	1,994,232	2,036,436	95,575	74,333	64,468	49,424	112,749	102,703
Trans World Airlines	8,279,658	7,246,992	312,353	252,959	233,648	181,209	342,468	286,188
United Air Lines	10,244,314	8,280,411	429,972	375,980	279,787	221,780	430,426	322,981
Western Air Lines	1,529,952	1,318,330	92,403	85,765	33,633	30,887	57,967	52,185
Trunk Total	63,116,944	53,761,216	3,095,360	2,745,902	1,651,594	1,385,930	2,635,793	2,152,840
Index (1951=100)	117.40	100.00	112.73	100.00	119.17	100.00	122.43	100.00
<b>Feeder Lines</b>								
All American Airways	466,703	431,582	20,362	20,845	2,786	2,895	9,801	9,063
Bonanza Air Lines	146,289	144,345	4,836	4,297	1,230	1,103	3,137	2,957
Central Airlines	231,330	222,303	6,963	2,465	837	441	4,857	3,479
Empire Air Lines	197,605	199,669	6,268	5,770	1,238	1,146	4,150	4,193
Frontier Airlines	729,487	695,151	16,099	12,683	4,257	3,180	15,320	13,903
Helicopter Air Service	52,864	47,188	0	0	0	0	0	0
Lake Central Airlines	180,617	155,391	3,738	2,689	583	462	3,658	3,436
Los Angeles Airways	39,854	55,476	0	0	0	0	0	0
Mid-Continent Airlines	137,477	147,035	5,736	5,490	1,119	1,085	3,106	3,088
Mid-West Airlines	112,466	122,627	356	396	52	50	450	492
Ozark Airlines	397,344	158,782	7,549	3,409	1,225	451	9,933	2,846
Piedmont Aviation	719,012	558,892	26,675	19,984	6,181	4,629	15,100	11,737
Pioneer Air Lines	628,618	559,618	24,725	21,538	6,410	5,701	15,087	13,431
Robinson Airlines	224,353	193,059	11,381	10,722	1,798	1,651	4,690	3,793
Southern Airways	530,369	398,876	17,462	10,271	2,977	1,861	11,138	8,340
Southwest Airways	373,062	372,771	16,133	17,795	3,080	3,416	7,834	7,828
Trans-Texas Airways	451,857	425,937	10,718	9,996	2,421	2,442	9,489	8,945
West Coast Airlines	227,093	172,613	10,079	6,962	1,439	986	4,769	3,624
Wiggins, E. W. Airways	64,615	100,494	315	558	29	51	254	401
Wisconsin-Central Airlines	298,468	273,574	14,341	6,002	2,133	928	6,267	2,161
Feeder Total	6,209,463	5,435,383	203,736	161,872	39,795	32,478	129,040	103,717
Index (1951=100)	114.24	100.00	125.86	100.00	122.53	100.00	124.42	100.00
<b>Territorial Lines</b>								
Caribbean-Atlantic Airlines	125,375	100,564	21,345	16,930	1,683	1,308	3,330	2,725
Hawaiian Airlines	542,391	462,113	52,784	47,140	6,859	6,078	11,206	10,021
Trans-Pacific Airlines	215,241	139,557	20,482	12,352	2,547	1,448	6,026	3,912
Territorial Total	883,007	702,234	94,611	76,422	11,089	8,834	20,562	16,558
Index (1951=100)	125.74	100.00	123.80	100.00	125.53	100.00	123.44	100.00
Grand Total	70,209,414	59,898,833	3,393,707	2,984,196	1,702,478	1,427,242	2,785,395	2,273,215
Index (1951=100)	117.21	100.00	113.72	100.00	119.28	100.00	122.53	100.00

### CAM Supplements and Aviation

#### Safety Releases

(Issued between April 1, 1952 and April 30, 1952, and obtainable from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.)

#### Aviation Safety Releases

No.	Date	Subject
358	4/7/52	Evaluation of Aircraft Fuels and Lubricating Oils.
359	4/10/52	Toxic Hazards and Fatigue in Agricultural Flying.

#### CAM Supplements

CAM No.	Supplement No.	Date	Title
60	7	4/1/52	Appendix A transmitting Regulations of the Administrator Part 609.

### Official Actions . . . . . CAB

(Continued from page 45)

E-6115 institutes investigation of and suspends through May 14, 1952, a certain rule of U. S. Airlines concerning reservations for space on cargo flights; orders matter be assigned for hearing before an examiner of the Board at a time and place to be designated. (Feb. 13.)

E-6116 approves, subject to stated conditions, provisions, or limitations, certain agreements between Pan American World Airways, various air carriers, foreign air carriers, and other carriers, relating to rate matters. (Feb. 13.)

E-6117 orders Northern Consolidated Airlines to show cause why the Board should not establish certain temporary mail rates for the period Jan. 1, 1951, through Dec. 31, 1951, over its routes certificated for transportation of mail. (Feb. 14.)

E-6118 denies petition of the city of Monte Vista, Colo., for reconsideration of the Board's decision in the *Frontier Renewal* case with respect to service to Monte Vista. (Feb. 14.)

E-6119 opinion and order in the *Philadelphia-Transatlantic Service* case authorize Trans World Airlines and Pan American World Airways to suspend service at Philadelphia, Pa., until 60 days after final decision by the Board in the *North Atlantic Renewal* case. Docket No. 3065 et al. (Feb. 14.)

E-6120 dismisses proceeding and vacates suspension (E-6114) in the matter of coach fares proposed by American Airlines. (Feb. 15.)

E-6121 grants The Flying Tiger Line exemption from Jan. 12, 1952, until Nov. 1, 1952, from the provisions of sec. 401 (a) so as to permit it to engage in interstate, overseas, and foreign air transportation of persons and property pursuant to contracts with any department of the Military Establishment. (Feb. 14.)

E-6122 grants motion of American Airlines, Eastern Air Lines, Delta Air Lines, and Chicago and Southern Air Lines for deferral of all future procedural steps in the matter of the application of Capital Airlines and Braniff Airways for route amendments and approval of interchange agreement. (Feb. 14.)

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# Scheduled Air Carrier Operations

(Continued from Page 48)

## Domestic: January-February 1952, 1951

Operator	Revenue passenger load factor (percent)		Ton-miles flown					
	January-February		Express January-February		Freight January-February		United States Mail January-February	
	1952	1951	1952	1951	1952	1951	1952	1951
<b>Trunk Lines</b>								
American Airlines	65.95	73.40	1,553,169	1,678,290	6,400,188	5,890,576	2,846,093	2,211,841
Braniff Airways	59.11	59.62	153,806	212,425	290,672	296,109	278,467	256,105
Capital Airlines	47.16	54.33	378,971	417,846	604,853	788,143	350,184	292,833
Chicago & Southern Air Lines	58.13	61.49	125,147	122,786	189,569	126,561	115,389	104,441
Colonial Airlines	45.13	52.14	14,816	15,849	21,838	17,424	21,658	17,233
Continental Air Lines	48.40	46.51	27,767	22,488	107,882	101,935	93,755	40,154
Delta Air Lines	63.78	63.62	202,219	223,041	2,470,623	2,515,129	2,021,201	1,755,641
Eastern Air Lines	62.52	63.82	600,383	1,116,607	1,079,900	862,273	984,173	944,786
Inland Air Lines	61.25	49.73	11,866	14,464	26,487	23,461	38,394	32,709
Mid-Continent Airlines	52.25	55.72	36,243	44,199	83,344	86,929	67,387	62,534
National Airlines	67.48	67.06	128,739	88,896	878,136	844,794	253,191	162,249
Northeast Airlines	46.85	54.53	31,205	38,820	26,105	34,955	25,468	23,535
Northwest Airlines	57.18	48.12	262,429	375,555	485,933	760,107	413,597	368,474
Trans World Airlines	68.22	63.32	1,014,074	1,538,037	2,470,623	2,515,129	2,021,201	1,755,641
United Air Lines	65.00	68.67	1,497,603	2,032,522	4,181,372	4,183,843	3,513,591	2,441,908
Western Air Lines	58.02	59.19	65,862	70,185	96,605	110,779	201,151	172,545
Trunk Total	62.66	64.38	6,104,299	8,012,010	17,540,693	17,332,938	11,558,287	9,167,269
Index (1951=100)	97.33	100.00	76.19	100.00	101.20	100.00	126.08	100.00
<b>Feeder Lines</b>								
All American Airways	28.43	31.94	21,628	25,638	0	0	9,815	7,571
Bonanza Air Lines	39.21	37.30	305	344	2,452	1,518	1,092	764
Central Airlines	17.23	12.68	1,566	0	3,531	0	3,821	3,038
Empire Air Lines	29.83	27.33	2,454	2,670	0	0	5,186	3,905
Frontier Airlines	27.79	22.87	10,637	9,720	53,344	30,183	18,660	15,873
Helicopter Air Service	—	—	0	0	0	0	4,498	3,466
Lake Central Airlines	15.94	13.45	8,035	21,881	0	0	2,587	2,905
Los Angeles Airways	—	—	0	0	0	0	7,206	7,772
Mid-Continent Airlines	36.03	35.14	5,097	9,130	5,587	6,989	2,741	2,828
Mid-West Airlines	11.56	10.16	0	0	0	0	1,376	1,199
Ozark Airlines	12.33	15.85	7,134	10,032	0	0	4,784	1,857
Piedmont Aviation	40.93	39.44	10,511	15,834	18,768	18,876	11,159	8,986
Pioneer Air Lines	42.49	42.45	6,816	7,893	27,995	20,726	18,878	16,461
Robinson Airlines	38.34	43.53	7,530	10,484	5,394	6,692	4,769	3,979
Southern Airways	26.73	22.31	14,202	9,508	0	0	14,211	12,810
Southwest Airlines	39.32	43.64	6,448	6,363	23,244	29,462	12,121	7,769
Trans-Texas Airways	25.51	27.30	4,695	4,845	11,742	10,141	9,617	5,991
West Coast Airlines	30.17	27.21	1,624	1,550	9,486	6,410	1,642	1,004
Wiggins, E. W. Airways	11.42	12.72	199	0	0	0	137	215
Wisconsin-Central Airlines	34.04	42.94	18,289	7,378	0	0	12,503	6,149
Feeder Total	30.84	31.31	127,120	143,270	161,503	130,997	146,805	114,542
Index (1951=100)	98.50	100.00	88.73	100.00	123.29	100.00	128.17	100.00
<b>Territorial Lines</b>								
Caribbean-Atlantic Airlines	50.54	48.00	0	0	5,508	4,481	1,779	1,461
Hawaiian Airlines	61.21	60.65	14,829	16,195	138,049	98,825	4,152	6,356
Trans-Pacific Airlines	42.27	37.01	1,450	206	5,473	2,591	3,138	—
Territorial Total	53.93	53.03	16,279	16,401	149,030	105,897	9,069	7,817
Index (1951=100)	101.70	100.00	99.26	100.00	140.73	100.00	116.02	100.00
Grand Total	61.12	62.79	6,247,698	8,171,681	17,851,226	17,569,832	11,714,161	9,289,628
Index (1951=100)	97.34	100.00	76.46	100.00	101.60	100.00	126.10	100.00

## Civil Aviation Highlights

	1952	1951
<b>Airports and airfields recorded with CAA</b>		
By type:		
Commercial	1,999	2,243
Municipal	2,316	2,288
CAA Intermediate	56	71
Military	348	324
All others	1,495	1,420
Private use	1,350	1,261
Miscellaneous government	145	159
<b>Civil airports and airfields by class:</b>		
Total	5,866	6,022
Class I and under	3,819	3,958
Class II	960	959
Class III	500	512
Class IV	375	373
Class V	127	138
Class VI and over	85	82
Total U. S. civil aircraft	87,962	91,753
Scheduled air carrier aircraft	1,278	1,221
<b>Civil aircraft production</b>		
February		
Total	227	239
1- and 2-place models	186	70
3-, 4-, and 5-place models	41	169
Over 5-place models		
<b>Certificates approved</b>		
February		
Student pilots	—	2,272
Private pilots	—	1,355
Commercial pilots	—	312
Airline transport pilots	—	65
Mechanics (original certificates)	—	403
Ground instructors (original certificates)	—	44
Flight instructor ratings	—	82
Instrument ratings	—	106
Control tower operators	—	48
<b>Traffic control activity</b>		
February		
Aircraft operations, CAA airport towers	1,206,841	1,110,376
Fix postings, CAA airway centers	1,165,591	1,070,528
Instrument approaches, CAA approach control towers	33,130	29,988
<b>AIRPORT OPERATIONS</b>		
<b>Washington National</b>		
Scheduled air carrier:		
Passengers departing	91,619	98,159
Passengers arriving	94,707	95,061
Aircraft arrivals and departures	12,110	11,426
Other aircraft arrivals and departures	2,888	3,462
<b>San Francisco Municipal</b>		
Scheduled air carrier:		
Passengers departing	58,459	46,907
Passengers arriving	57,767	46,674
Aircraft arrivals and departures	7,319	6,555
Other aircraft arrivals and departures	3,633	4,258
<b>Oakland Municipal</b>		
Scheduled air carrier:		
Passengers departing	10,285	7,925
Passengers arriving	10,717	7,474
Aircraft arrivals and departures	5,577	4,483
Other aircraft arrivals and departures	7,312	9,208
<b>Miami International</b>		
Scheduled air carrier:		
Passengers departing	88,390	88,397
Passengers arriving	91,162	88,383
Aircraft arrivals and departures	9,189	9,400
Other aircraft arrivals and departures	12,989	7,730
<b>Los Angeles International</b>		
Scheduled air carrier:		
Passengers departing	71,510	53,298
Passengers arriving	72,477	53,386
Aircraft arrivals and departures	9,197	7,193
Other aircraft arrivals and departures	8,072	4,810

<sup>1</sup> Airport type definitions: Commercial—Public use and public services, private control. Municipal—Public use and public services, public control. CAA Intermediate—No public services, CAA control. Military—No public services, military control. Other—(a) No public services, private control; (b) No public services, Federal Government control (Forest Service, etc.).

<sup>2</sup> The following is a breakdown of paved airports and unpaved airfields by class of facility:

Class of Facility	Airports		Airfields		Total	
	1952	1951	1952	1951	1952	1951
Class I and under	122	112	3,697	3,846	3,819	3,958
Class II	187	170	773	789	960	959
Class III	341	337	159	175	500	512
Class IV	332	335	43	38	375	373
Class V	121	131	6	7	127	138
Class VI and over	81	80	4	2	85	82
Total	1,184	1,165	4,682	4,857	5,866	6,022

\* Not available.

## Suspensions and Revocations

(Continued from page 45)

Performing low-level acrobatics and carrying a passenger during such maneuvers when the passenger was not equipped with a parachute—6 months from Dec. 29—Gerald A. Taylor, Portland, Ore. (Private).  
Low flying over a congested area—90 days from Feb. 1—Frederick C. Haupt, Yakima, Wash. (Private).

### Revocations

Operating an aircraft carrying a passenger (The flight terminated when the engine stalled and the aircraft crashed during a forced landing.)—George Nogowski, Geneseo, N. Dak. (Student).

Operating an aircraft carrying a passenger, and other violations—Barry Holmes, Udall, Kans. (Student).

Low flying, operating an aircraft while under the influence of intoxicants, and other violations—Everett H. Donelson, Broken Bow, Neb. (Private).

Operating an aircraft during instrument conditions when he did not have an instrument rating, failing to observe traffic control instructions, and other violations—Gene C. McAdoo, Union City, Tenn. (Private).

Operating an aircraft on a passenger carrying flight (while holding a Student Certificate), low flying, and other violations—Muriel W. Tallent, Ontario, Calif. (Private).

Failure to conform to the traffic pattern for the Salt Lake Airport, Salt Lake City, Utah; failure to maintain contact with traffic control; and other violations—LeGrand Stokes, San Miguel, Calif. (Student).

Operating an aircraft carrying a passenger and flying low (The aircraft crashed near a residence when the pilot lost control during a low altitude turn following a pull-up.)—Melvin R. Van Wechel, Rudyard, Mont. (Student).

Operating an aircraft while under the influence of intoxicating liquor, buzzing a residential area, buzzing a crowd assembled at a rodeo, and other violations (The aircraft crashed after the hitting the top of a tree while buzzing the main street of Mackay, Idaho.)—David R. Hardman, Mountain Home, Idaho (Private).

Starting an aircraft when only the pilot's 4-year-old daughter was at the controls (When the engine started, the daughter opened the throttle causing the aircraft to lunge forward and strike a parked plane.)—Byron Hess, Maple Valley, Wash. (Student).

# Board Revises Civil Air Regulations On Aircraft Maintenance and Repair

(Continued from page 41)

and instruments, and indicates the various operations constituting routine maintenance, repairs, and alterations.

"This revision restates and clarifies the standards for the performance of maintenance, preventive maintenance, repair and alteration of any certificated aircraft or component thereof. It sets forth the classes of persons who are authorized to perform and approve maintenance, preventive maintenance, repair, or alteration, and describes the required records. With certain exceptions, only certificated mechanics, persons operating under the supervision of certificated mechanics, repair stations, and appropriately certificated air carriers are authorized to work on aircraft or aircraft components. One exception is a pilot who will now be authorized to perform preventive maintenance functions on certain personally owned or operated aircraft. The other is a manufacturer who will now be permitted, without obtaining a repair station certificate, to rebuild or alter products for which he holds a type or production certificate or which are manufactured by him in accordance with appropriate specifications approved by the Administrator. In order to perform work on aircraft or aircraft components other than those mentioned, a manufacturer must either hold an appropriate repair station certificate or employ properly rated mechanics for the supervisory and inspection work. In addition, except as permitted for manufacturers, the performance of repair and alterations on instruments and major repairs and alterations on propellers are restricted to appropriately certificated air carriers and to certificated repair stations. An individual mechanic would normally not be equipped to perform such operations, and therefore instrument and major propeller work is restricted to specially rated facilities which must be equipped to perform such work.

"It should be noted that Part 18 as revised provides that an aircraft need be flight tested only after it has undergone major repair or major alteration operations. It should be noted also that Part 18 as revised no longer requires that a private pilot shall have at least 200 hours of pilot time before being eligible to conduct a flight test on aircraft after certain repairs or alterations, because this requirement has, in effect, been superseded by the more recently adopted provisions of §43.21 which contain no such requirement."

**Part 24—Mechanic and Repairman Certificates.**—"Currently effective Part 24 establishes requirements for the certification and rating of aircraft mechanics and aircraft engine mechanics. This revision of Part 24 establishes certain new requirements for the issuance of mechanic certificates and ratings, delineates the privileges of such certificates, and establishes basic operating rules for the holders thereof. It also establishes a new classification of airman to be known as a repairman and provides for certification as such.

"Mechanic certificates are to be issued with airframe and powerplant ratings only, and the standards prescribed for their issuance are similar to the current aircraft and engine ratings. Each applicant must take a practical examination appropriate to the rating sought. It is intended that this examination shall be designed to permit an applicant to demonstrate that he possesses a well-rounded, basic understanding of the work which the rating sought authorizes him to perform. All examinations serving to qualify an individual for a mechanic certificate shall be conducted by a representative of the Administrator to make certain that all applicants meet the same general standards.

"Under the terms of this revision the airframe and powerplant mechanic shall have all of the privileges of the present aircraft and aircraft engine mechanic. In addition, an airframe mechanic is privileged to return airframes and their components to service after minor repair or minor alteration; a powerplant mechanic is privileged to return powerplants and propellers and their components to service after minor repair or minor alteration. In order to assure that an applicant who is not a graduate of an approved school is properly qualified to discharge his duties and responsibilities under the terms of his certificate, the experience requirements have been increased from 12 to 18 months for either an airframe or powerplant rating, and these requirements provide that an applicant desiring both ratings must show at least 30 months of concurrent experience. It should be noted that current holders of mechanic certificates are deemed to have met these requirements.

"The regulations in this revision also specify the recent experience requirements which must be met by each certificated mechanic before he is considered qualified to exercise the privileges of his certificate and ratings. These requirements recognize the fact that some holders of mechanic certificates exercise the privileges of such certificates in a supervisory manner only, and that recent experience acquired in this manner is considered satisfactory.

"A classification of airman to be called a 'repairman' has been established in this part. For the performance of work on airframes or engines at a repair station, a properly certificated mechanic is sufficient. However, a repairman is required at a repair station which is authorized to perform work on instruments or to perform major alterations and repairs on propellers. The necessity for this is established by the Civil Aeronautics Act of 1938, as amended, in that an approved rated airman must be in charge of the inspection, maintenance, overhaul, or repair of United States aircraft or their components. An airframe or powerplant mechanic as such is not authorized to perform instrument or major propeller work, unless he is also employed and certificated as a repairman.

"A repairman will be employed and certificated for a particular job, and he is not authorized to exercise his privileges except while carrying out his duties as required by that job. As it is considered that in most cases no one below the level of a shop foreman or department head need be certificated, it is anticipated that few repairmen will be required by any one repair station.

"Appropriately certificated air carriers, by the terms of the revision of Part 18 are no longer required to obtain a repair station certificate to perform their own maintenance and overhaul. Therefore, in order to assure that such air carriers have properly rated personnel in charge of their instrument and propeller shops, provision has been made for the recommendation and certification of repairmen in the same manner as by repair stations.

"A factory mechanic rating has been omitted from this revision of Part 24 since revised Part 18 now permits a manufacturer to rebuild or alter products for which he holds a type or production certificate or which are manufactured by him in accordance with appropriate specifications approved by the Administrator."

**Part 52—Repair Station Certificates.**—"Currently effective Part 52 establishes requirements for the issuance of repair station certificates and ratings and basic operating rules for the holders thereof. It is the intent of this revision to improve the standards of repair stations. To accomplish this objective additional repair station ratings are hereby established

to take into account the trend toward specialization, so that the stations will be better able to maintain present-day aircraft. The Board believes that repair station ratings issued in accordance with the provisions of this part will reflect more accurately the scope of authority and capabilities of the applicant. It is also the intent in this revision to place a greater degree of responsibility for the operation and performance of repair stations on management as a consequence of the additional privileges granted the certificate holder. For these reasons the Board has provided for a re-examination of all repair stations within one year from the effective date of this part. By that time all repair stations must meet prescribed standards of inspection, quality control, housing, and performance.

"Under the terms of this part the following general ratings may be issued to repair stations: airframe, powerplant, propeller, radio, instrument, and accessory. Instead of these general ratings a limited rating may be issued authorizing an applicant to work on some particular type of airframe, powerplant, etc., or to perform some specialized maintenance, repair, or overhaul function. Thus, an applicant may, if he so desires, apply only for the rating for which he is able to furnish the required facilities, equipment, materials, and personnel. An applicant for a powerplant rating would not, for example, have to be equipped to repair all powerplants, but may choose the make or model with which he desires to work.

"All applicants are required to furnish housing, facilities, equipment, materials and personnel adequate to perform competently the work authorized by the particular rating sought. The exact type and amount of such housing, facilities, equipment, materials, and personnel will, in all probability, vary in each instance. This part sets forth the main functions to be performed by a repair station holding a particular rating. It is also designed to provide applicants with an incentive to provide more efficient methods of accomplishing the required functions.

"Provision is made for a repair station with an airframe rating to conduct annual inspections and to issue ferry permits. These additional privileges are granted in the belief that after reinspection repair stations with airframe ratings will be qualified to assume this additional responsibility.

"It should be noted that the provisions for designation of a certificated repairman have been provided in Subpart B of Part 24. This was done both to have the airman certification rules in the proper part and to provide for recommendation of repairmen either by air carriers who have an approved maintenance program or by repair stations."

**Part 53 — Mechanic School Certificate.**—"Currently effective Part 53 establishes certification and rating requirements for mechanic schools, provides for aircraft, aircraft engine, and combined aircraft and aircraft engine ratings and curricula, and establishes basic operating rules for the holders of mechanic school certificates. This amendment revises these regulations and establishes new requirements for the issuance of mechanic school certificates and ratings and basic operating rules for the holders thereof. Under the terms of this revision the only ratings to be issued are airframe and powerplant which correspond to the previously issued aircraft and aircraft engine ratings, respectively. The requirements for facilities, equipment, material, and personnel are stated as general standards to be met by each applicant. The type and amount of such facilities, equipment, materials, and personnel must be determined by the requirements of the particular rating sought and the maximum number of students expected to be in attendance at any particular time. Compliance with such general standards is the primary responsibility of the applicant.

"No provision has been made for the certification or operation of schools for instrument, propeller,

(Continued on page 51)

TITLE	NO.	Civil Air Regulations				Civil Aeronautics Manuals			
		Price	Date	Amendments	Special Regulations	Price	Date	Supplements	Amending Releases
AIRCRAFT									
Certification, Identification, and Marking of Aircraft and Related Products . . . . .	1	\$0.05	1/15/51	1					
Airplane Airworthiness; Normal, Utility, Aerobatic, and Restricted Purpose Categories . . . . .	3	.15	11/ 1/49	7	358			9	193,202
Airplane Airworthiness . . . . .	4a	.20	4/ 7/50		358, 375	(9)	7/ 1/44		
Airplane Airworthiness; Transport Categories . . . . .	4b	.25	7/20/50	6	358, 361			6	
Glider Airworthiness . . . . .	5	.05	3/ 5/52						
Rotorcraft Airworthiness . . . . .	6	.10	1/15/51	1	358			1	
Aircraft Airworthiness; Restricted Category . . . . .	8	.05	10/11/50			.60	1/ 1/51	1	
Aircraft Airworthiness; Limited Category . . . . .	9	.05	11/ 1/49	1					
Aircraft Engine Airworthiness . . . . .	13	.05	3/ 5/52		358				
Aircraft Propeller Airworthiness . . . . .	14	.05	3/ 5/52		358	.20	5/ 1/46		
Aircraft Radio Equipment Airworthiness . . . . .	16	.05	2/13/41			Free	2/13/41		62,272
Maintenance, Repair, and Alteration of Airframes, Powerplants, Propellers, and Appliances . . . . .	18	.05	6/15/52		377	1.25	8/ 1/49	1	
AIRMEN									
Pilot Certificates . . . . .	20	.05	8/ 1/49	10				1	
Airline Transport Pilot Rating . . . . .	21	.05	8/15/49	4					
Lighter-than-air Pilot Certificates . . . . .	22	.05	11/ 1/49	6					
Mechanic and Repairman Certificates . . . . .	24	.05	6/15/52		365			1	
Parachute Rigger Certificates . . . . .	25	.05	9/ 5/50	2					
Air-traffic Control-tower Operator Certificates . . . . .	26	.05	11/ 1/49	5				4	
Aircraft Dispatcher Certificates . . . . .	27	.05	11/ 1/49	4				2	
Physical Standards for Airmen . . . . .	29	.05	10/ 1/49	2					
Flight Radio Operator Certificates . . . . .	33	.05	2/15/50	5				3	
Flight Navigator Certificates . . . . .	34	.05	11/ 1/49	4				2	
Flight Engineer Certificates . . . . .	35	.05	11/ 1/49	4				2	
OPERATION RULES									
Air Carrier Operating Certification . . . . .	40	.05	9/ 1/49		356, 363, 366, 367, 369, 378			6	
Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States . . . . .	41	.05	11/15/49	5	356, 367, 381			12	
Irregular Air Carrier and Off-Route Rules . . . . .	42	.10	6/ 1/49	11	367, 368, 375, 378, 379	1.00	9/ 1/49	4	
General Operation Rules . . . . .	43	.05	8/ 1/49	7				3	
Foreign Air Carrier Regulations . . . . .	44	.05	9/ 1/49					1	
Commercial Operator Certification and Operation Rules . . . . .	45	.05	11/15/49	1	356, 367, 375				
Operation of Moored Balloons . . . . .	48	.05	9/ 1/49						
Transportation of Explosives and Other Dangerous Articles . . . . .	49	.10	7/20/49						
AIR AGENCIES									
Airman Agency Certificates . . . . .	50	.05	10/ 1/49	4		.50	8/—/51		
Ground Instructor Rating . . . . .	51	.05	10/10/49	2					
Repair Station Certificates . . . . .	52	.05	6/15/52					1	
Mechanic School Certificates . . . . .	53	.05	6/15/52			Free	5/—/40		
Parachute Loft Certificates and Ratings . . . . .	54	.05	10/15/49	1		.15	7/1/48		
AIR NAVIGATION									
Air Traffic Rules . . . . .	60	.10	8/ 1/49					1	
Scheduled Air Carrier Rules . . . . .	61	.10	9/ 1/49					10	
Notice and Reports of Aircraft Accidents and Missing Aircraft . . . . .	62	.05	5/ 1/49	7	356, 363, 366, 367, 368				

NOTE: Items for which a price is listed may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be made by check or money order payable to the Superintendent. Amendments and Special Regulations may be obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C. Free Manuals, Supplements and Releases are available from the Office of Aviation Information, Civil Aeronautics Administration, Washington 25, D. C.

<sup>1</sup> Pending publication of a complete Manual, supplements containing rules, policies, and interpretations of the CAR's will be issued in the form of pages for a Manual and will be available free of charge until release of the Manual.

<sup>2</sup> Certain aircraft may comply with the provisions of this Part or Part 4a. Interpretation No. 1 adopted March 7, 1952.

<sup>3</sup> Out of print.

## Air Tours Used for Promoting Soil Conservation in Midwest

Increasing popularity of air tours in promoting soil conservation is shown in a survey by the Third Region of the Civil Aeronautics Administration, which covers six midwestern states.

The survey reveals that 179,337 persons last year attended 67 gatherings where air tours were offered in connection with soil conservation meetings. Of that number, 9,376 were given an opportunity to study soil conservation from the air. Sponsors said that plane rides had the advantage of giving broader view of the entire conservation program than was possible from the ground. Farmers who flew said the aerial views were especially effective in showing the need for conservation work and in revealing the effect of work previously done.

Tours were sponsored by chambers of commerce, soil conservation districts, local business groups, vocational agriculture classes, and Flying Farmers or other aviation organizations. The usual procedure was for the sponsor to arrange a mass meeting at which soil conservation problems could be discussed. This was topped off by an opportunity to take a "look-see" from the air and, attracted many who had never before been up in a plane.

## Mid-West's Certificate

(Continued from page 43)

posals of route extensions and modifications do not, in the Board's view, justify any change in its decision not to renew Mid-West's authorization.

**Dissenting Opinions.**—Member Josh Lee dissented from the Board's refusal to create a sound and logical route pattern which Mid-West could operate with DC-3 aircraft. He stated that Mid-West's experience with its single-engine operation did not constitute a reasonable test of the traffic potential of this area and that Mid-West, if given an adequate route structure, could reasonably be expected to make as good a showing as local service carriers in other sections of the country. Mr. Lee pointed out that Mid-West is now controlled by Purdue Research Foundation which can supply the carrier with the necessary funds, aircraft, and management to commence operations with DC-3 aircraft almost immediately. Mr. Lee also objected to the majority's decision to reopen the proceeding to determine whether 10 smaller communities should be placed on the trunkline routes of Mid-Continent and United. He pointed out that this is contrary to the Board's established policy of separating the trunks from the local service carriers.

Member Joseph P. Adams dissented from the majority decision primarily on the grounds that the Mid-West single-engine operation of only a little more than one year could not fairly be construed as a true local service experiment. He felt that similar short-run operations by other local service carriers, which have since been renewed and extended, showed, initially, no more favorable economic results in the public interest than those of Mid-West.

Member Adams also pointed to the serious adverse effect on the mail pay needs of the possible new Braniff-Mid-Continent system.

## Repair Regulations Revised

(Continued from page 50)

radio, or accessory mechanics since the work performed on aircraft other than airframe or powerplant (with the exception of minor repairs and alterations to propellers) is to be performed only by the certificated repair station, the manufacturer, or the appropriately certificated air carrier. It should be noted, however, that the part does not in any way purport to prohibit the establishment of specialized courses or schools for such mechanics or to prevent the graduates of such schools from obtaining employment as certificated repairmen in repair stations or with air carriers."



# Rear-View Mirrors and Atomic Probes

## Latest Projects of CAA's T. D. Center

A rear-view mirror for pilots and an atomic probe for measuring soil density and moisture are among the newest aids to aviation which have been announced as a result of work at CAA's Technical Development and Evaluation Center at Indianapolis, Ind.

When a pilot has taxied his airplane out onto the runway and is ready for take-off, he formerly could see little or nothing behind him. Thanks to a new device, he now can tell at a glance whether to proceed, or to make way for an airplane that is coming in to land. In the air he can spot an overtaking aircraft far enough behind to allow him plenty of time to turn out of its path. After landing, he will know when it is safe to turn off the runway.

It's all done with mirrors, and has been made possible through the efforts of the CAA Technical Development and Evaluation Center at Indianapolis, Indiana. They have developed a transparent streamlined plastic bubble, which includes a mirror. This is mounted in the cockpit canopy, above and ahead of the pilot.

Extensive flight tests have proved its effectiveness. Even small aircraft can be seen at a quarter-mile rearward distance. In fact, practically all of the sky above and to the rear of the airplane can be scanned. The bubble-mirror assembly is light in weight, easy to install, and so far has shown no tendency to affect the flying characteristics of the airplane.

**Rear-View Mirror Approved.**—The use of this arrangement in the Cessna Model 140 airplane already has been approved. Approvals for other airplanes require mainly that flight installations be demonstrated to CAA officials to make sure that they are properly installed, and to make sure that the flying characteristics of the airplanes have not been seriously affected.

The Technical Development and Evaluation Center has been evaluating other devices to give the pilot wider range of vision. These include special plastic lenses 15 inches in diameter, curved mirrors, etc. However, the flat mirror-bubble arrangement has proved the best so far.

**Atomic Probes.**—In another project, "atomic probes" and a recording Geiger counter are being used by the CAA to measure soil density and moisture, which are critically important in designing airport runways.

The new "atomic" method of soil measurement, using neutrons and gamma rays, is expected to prove valuable also in highway design and in agriculture. Early work on the project was by the Center through a Cornell University contract. The equipment and methods are being further developed both at the Center and at Cornell.

Standard methods of measuring the amount of water in soil, and the density of soil, are laborious and expensive. Furthermore, until development of the "atomic" device, there was no practical way of measuring changes of moisture content under pavements, or in frozen soil.

Without accurate information about the density and the varying moisture content in a given soil, engineers must design by the "educated guess" system. If they "overguess" the bearing qualities of the soil, the paving quickly disintegrates. Should they "underguess", the cost of unnecessary paving, excavation and fill may easily run to one-half million dollars or more on a single airport.

The "atomic" measuring method is simple to use, and the equipment is relatively inexpensive. Basically, it consists of a radioactive source and a detector, which are lowered into a one-inch stainless steel tube driven into the ground.

The same electronic recorder is used for making measurements of both density and soil moisture.

The probes for the two purposes are similar in appearance, but different in their arrangement.

**Rays Bombard Soil.**—The density probe is 15 inches long, and designed to fit snugly into the steel tube. Capsules of radioactive cobalt 60, in the tip of the probe, continuously bombard the soil with gamma rays through the walls of the steel tube. The rays are scattered by the soil, and part of them return to the Geiger counter near the top of the probe. The number of gamma rays returning to the counter is directly related to the soil density.

The counter is connected with the electronic recorder through a coaxial cable. The returning gamma rays not only flash neon lights on the front of the recorder, but also are recorded on a device which looks like the mileage part of an automobile speedometer. Counts are normally made for a period of 3 minutes to reduce the purely statistical error in the Geiger tube counts.

The radioactive material in the density probe is relatively weak, but certain precautions should be followed in using the equipment, Center experts caution. These consist largely of keeping the body a foot or more from the probe, and placing the probe in a lead or concrete shield when it is not in use.

The moisture probe, about 7 inches in length, is designed like the density probe to fit snugly into the steel tube. In this probe, the radioactive source emits neutrons instead of gamma rays. These neutrons are strongly affected by hydrogen atoms, a primary constituent of water.

Neutrons colliding with hydrogen atoms, are scattered in various directions and lose a large part of their energy thus becoming "slow neutrons".

After several such collisions, some of the slow neutrons return to the vicinity of the probe. Here they strike a piece of silver foil, which in turn emits momentary flashes of beta rays. The number of such flashes is recorded on the counter.

Water, of course, contains two atoms of hydrogen and one of oxygen in each molecule. There is comparatively little hydrogen in the soil except in the form of moisture. The number of slow neutrons returning to the probe as a result of collision with the hydrogen atoms, therefore, gives a relatively accurate measurement of the moisture content of the soil.

One advantage of this method of measuring soil moisture is that it is effective whether the water is in vapor, liquid, or solid state.

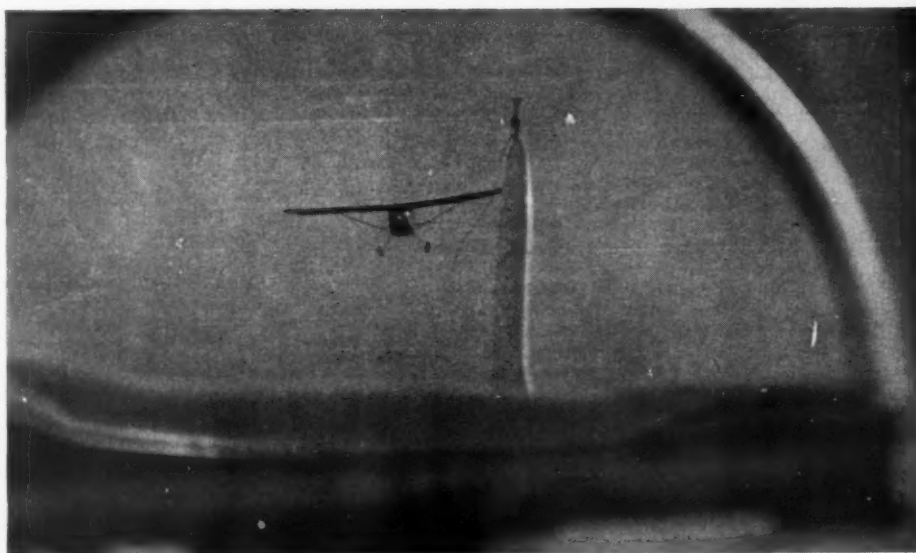
While polonium-beryllium has proved to be a useful source of neutron emission, its life is relatively short. This makes calibration of equipment difficult, particularly under field conditions. The CAA Center now is experimenting with purified Radium D, which has a much longer radioactive life.

**Agricultural Value.**—Engineers and agriculturists long have sought information about the migration and concentration of moisture in the ground in various seasons of the year. For lack of a practical method of making such measurements, however, very little is known about the subject. Researchers at the Center hope the "atomic" method of measuring moisture will make a fund of such information available in the near future.

Large numbers of the steel tubes can be placed in position and left in the ground indefinitely, stoppered with vacuum-bottle tops. By lowering the moisture probe into the tubes, readings of moisture few minutes. As an alternative, the readings can be transmitted automatically to a central point by radio.

In addition to its engineering applications, the soil moisture measurements may bring direct agricultural applications. As one example, irrigation water now is applied to crops largely on a guess-work basis. With a ready method of measuring soil moisture, it would be possible to apply the precise amount of water for the crop, avoiding expensive and wasteful over-watering.

## Rear-View Mirror Newest Aid to Safe Flight



What the pilot may see in his rear-view mirror is shown above—another airplane approaching from behind on a potential collision

course. In many small planes, a pilot can look behind only by turning the plane; in others the rear-view is restricted.

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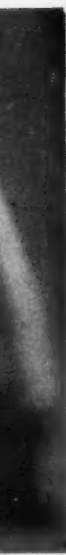
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